

LIBRARY  
STATE PLANT BOARD

J. C. GOODWIN, NURSERY INSPECTOR  
JOHN F. SEAGLE BUILDING  
GAINESVILLE, FLORIDA

JAN 23 1942

**THE INSECT PEST SURVEY  
BULLETIN**

---

Volume 21

Supplement to No. 9

November 10, 1941

---

**BUREAU OF  
ENTOMOLOGY AND PLANT QUARANTINE  
UNITED STATES  
DEPARTMENT OF AGRICULTURE  
AND  
THE STATE ENTOMOLOGICAL  
AGENCIES COOPERATING**



Digitized by the Internet Archive  
in 2016

[https://archive.org/details/insectpestsurve2191wash\\_1](https://archive.org/details/insectpestsurve2191wash_1)

## A PRELIMINARY CHECK LIST OF THE ENTOMOGENOUS FUNGI OF NORTH AMERICA

By Vera K. Charles

Associate mycologist, Division of Mycology and Disease Survey  
Bureau of Plant Industry  
United States Department of Agriculture

The fungi which parasitize or grow in association with many species of economic insects have long been a subject of interest to entomologists. Information concerning them, however, is widely scattered and often appears in periodicals or mycological works not readily accessible to the working entomologist or others interested. It has seemed worth while, therefore, to prepare this list as a means of pointing out the large numbers of fungi and insect hosts actually involved.

It is recognized that the list can be considered as preliminary only, because there are undoubtedly many entomogenous fungi and their insect hosts as yet unreported or overlooked in the preparation of this paper. It is hoped that the list will awaken sufficient interest to stimulate entomologists, mycologists, and collectors in general to report new fungi and new hosts, as well as further distributional records. Such assistance will be appreciated and will serve to make possible in the future a more complete and thereby more useful list.

The data presented here are based primarily on an index of entomogenous fungi which has been maintained for many years as part of the Mycological Collections of the Bureau of Plant Industry. This index includes data from the literature on the subject, including fungus lists and monographic accounts, from correspondence and from herbarium specimens. Only the herbaria of the Bureau of Plant Industry and the Smithsonian Institution have been worked over in this connection. Time and circumstances have not permitted work in other fungus herbaria, but it is hoped that available data from other institutions can be obtained later on. The Laboulbeniaceae, constituting a very large group of minute species, have not been considered because, although parasitic on insects, they do not kill their hosts and are therefore not entomogenous fungi in the usual sense of the term.

Geographically the list covers the North American Continent, including the West Indies and the countries of Central America, which is essentially the area included in Seymour's "Host Index of the Fungi of North America." Except for the United States and Puerto Rico, however, available data are decidedly fragmentary, but serve at least to point out how little is known on the subject and where the gaps in our knowledge occur.



For ease of reference an alphabetical arrangement of the species is presented, no attempt being made to follow any system of classification. Each recognized species is set off in caps followed by the authority and a citation to the place of publication. Pertinent synonyms, that is to say, those which occur in the entomogenous fungus literature, have been included, but no effort has been made to work out complete synonymy. Synonyms are underscored.

Insect hosts are arranged under each fungus in alphabetical order and to the right of each is placed the known distribution of the fungus attacking it. For the United States distribution is indicated by States, but otherwise by countries. Hosts for which no specific distribution is indicated are records from Seymour's "Host Index of the Fungi of North America" or other sources which omit reference to locality. In general, records of insect hosts infected by artificial inoculations have been omitted.

A complication often arises in that many fungi in the course of their life cycles may produce two reproductive stages and each may be given a distinct botanical name. This is particularly true in the case of the ascus-producing fungi (Ascomycetes) where normally a perfect (ascus) stage and an imperfect (conidial) stage occur, as for example Ophiocordyceps clavulata (Schw.) Petch and Hirsutella locaniicola (Jaap) Petch. The latter name applies to the so-called imperfect stage. Under the rules of botanical nomenclature, the perfect-stage name has precedence over any names applied to conidial or imperfect stages and is given preference in this list; however, as many conidial names occur commonly throughout the literature they have been included, but their status as such properly indicated. Cross references will enable such fungi to be located under either name.

A list of insects with their entomogenous fungi is appended. As noted above, the place of publication of each fungus species is cited, but it is recognized that this is of interest primarily to the systematic mycologist. The entomologist or general collector will be more concerned with the general literature on the subject and, accordingly, a few of the more important and accessible works dealing with entomogenous fungi are given following the list of species. Most of the articles cited contain bibliographies so that the references included, though few, will provide a means of exploring the entire field.

Grateful acknowledgment is made to Miss Gertrude Myers, of the Division of Insect Pest Survey and Information, Bureau of Entomology and Plant Quarantine, for checking the scientific names of the insect hosts in order that they might conform to present-day entomological nomenclature. We also appreciate the opportunity of consulting A. T. Speare's index in the Division of Insect Pest Survey and Information on the subject of entomogenous fungi.

An asterisk is used to designate combinations of fungus and host represented by specimens in the mycological collections of the Bureau of Plant Industry.

ACREMONIELLA SP.

Host: Crioceris asparagi (L.)

ACREMONIELLA VERRUCOSA Togn. Rond. R. Ist. Lomb. di Sci.  
et Lett. (2 ser.) 29: p. 3  
extr. 1896.

Host: Hypera punctata (F.)

Va.\*

ACREMONIUM TENUIPTES Petch Brit. Mycol. Soc. Trans. 21:  
64-66. 1937.

Syn. Sporotrichum araneorum Cav. Fung. Longob. exsic. No. 240. 1892.

Host: Araneida

Mass.

ACROSTALAGMUS ALBUS Preuss Linnaea 24: 126. 1851.

Hosts: Aphis sp.

P. R.

Corythaica monacha Stal

Pyrausta nubilalis (Hbn.)

Pa.

Sipha flava (Forbes)

P. R.

ACROSTALAGMUS APHIDUM Oud. Nederland. Kruidk. Arch. (Ser. 3)  
2: p. 759. 1902.

Hosts: Aphis sp.

P. R., \* Fla.\*

Aphis gossypii Glov.

Carolinaia cyperi Ainslie

Corythaica monacha Stal

P. R.

Hysteroneura setariae (Thos.)

P. R.\*

Macrosiphoniella sanborni (Gill.)

Ind.

Myzus persicae (Sulz.)

Fla.\*

Rhopalosiphum pseudobrassicae (Davis)

Tex.

Rhopalosiphum rufomaculatum (Wilson)

Ind.

Sipha flava (Forbes)

P. R.\*

Toxoptera aurantiae (Fonsc.)

Dominican Republic

AEGERITA WEBBERI Fawcett Mycologia 2: 167. 1910.

Hosts: Aleurodes sp.

Ala., \* Fla., \* La., \*

Costa Rica, \* Cuba, \*

Dominican Republic.

Aleurocanthus woglumi Ashby

Cuba

Aleurodicus minimus Quaint.

Fla., P. R.

Aleurothrixus howardi (Quaint.)

Fla., P. R.

Dialeurodes citri (Ashm.)

Ala., \* Fla., \* La., \* Miss.\*

P. R.

Dialeurodes citrifolii (Morg.)

Fla.

ASCHERSONIA SP.

Hosts: Aleurocanthus woglumi Ashby

Cuba, Dominican Republic

Aleurodes sp.

Cuba, Dominican Republic

Coccus viridis Green

P. R.\*

Dialeurodes citri (Ashm.)

Fla., Cuba

Eucalymnatus tessellatus (Sign.)

La., \* P. R.

Locanium nigrofasciatum Perg.

ASCHERSONIA ALBYRODIS Webber U. S. Dept. Agr. Veg. Phys.  
& Path. Bul. 13: 21. 1897.

Imperfect stage of Hypocrella libera Syd.

Hosts: Aleurocanthus woglumi Ashby

Fla., \* Costa Rica,  
Cuba, \* Dominican  
Republic, P. R.  
Fla., \* Cuba, \* P. R.  
Cuba, \* Panama  
P. R.  
Jamaica  
P. R.\*

Aleurodes sp.

Aleurodicus cardini Back

Aleurodicus minimus Quaint.

Aleurodious pimentae Laing

Aleurothrixus howardi (Quaint.)

Berisia inconspicua (Quaint.)

Coccidae

Dialeurodes citrifolii (Morg.)

Lecanium sp.

Trialeurodes abutilonea (Hald.)

Trialeurodes floridensis (Quaint.)

C. Z.\*

Fla.

Fla.

Fla.

ASCHERSONIA ARISTATA Ell. (Considered pycnidial form of  
Hypocrea phyllogena Mont. by  
Patouillard in correspondence  
2-15-1895.)

Host: Lecanium sp.

Fla.\*

ASCHERSONIA AURANTIACA Petch Brit. Mycol. Soc. Trans.  
23: 135-6. 1939.

Imperfect stage of Stereocrea aurantiaca Petch

Host: Paraleurodes perseae (Quaint.)

Fla.\*

ASCHERSONIA BASICYSTIS Berk. & Curt. Linn. Soc. Jour.  
10: 302. 1868.

Imperfect stage of Hypocrella phyllogena (Mont.) Petch

Host: Lecanium sp.

Costa Rica, Cuba,  
Jamaica, P. R.

ASCHERSONIA BRUNNEA Petch Paradeniya, Ceylon, Roy. Bot.  
Gard. Ann. 7: 251. 1921.

Host: Unidentified hosts

Fla., Costa Rica\*

ASCHERSONIA COLUMNIFERA Petch Paradeniya, Ceylon, Roy.  
Bot. Gard. Ann. 7: 258. 1921.

Host: Aleurodes sp.

Fla.

ASCHERSONIA CURENSIS Berk. & Curt. Linn. Soc. Jour.  
10: 351. 1868.

Imperfect stage of Hypocrella epiphylla (Mass.) Sacc.

Hosts: Unidentified hosts

Aleurocanthus woglumi Ashby

Coccidae

Coccus acuminatus (Sign.)

Eucalyptatus tessellatus (Sign.)

Lecanium sp.

Lepidosaphes beckii (Newm.)

Saissetia hemisphaerica (Targ.)

Toumeyella liriodendri (Gmel.)

Cuba, P. R.\*

C. Z.

Fla., Dominican

Republic, P. R.\*

Costa Rica

Fla., P. R.

Fla.

P. R.

P. R.

Fla.



ASCHERSONIA FLAVO-CITRINA of Fla. not P. Henn. See also  
A. goldiana Sacc. & Ell.

Hosts: Aleurodicus minimus Quaint.  
 Dialeurodes citri (Ashm.)

P. R.\*  
 Fla.\*

ASCHERSONIA GOLDIANA Sacc. & Ell. Sacc. Syll. 14: 990.  
 1899.

Hosts: Aleurodes sp.

Aleurocanthus woglumi Ashby  
 Dialeurodes citri (Ashm.)  
 Dialeurodes citrifolii (Morg.)

Cuba  
 Fla., Costa Rica,\*  
 P. R.  
 Jamaica  
 Panama\*  
 Fla.

ASCHERSONIA TURBINATA Berk. Ann. Nat. Hist. (ser. 2) 9:  
 192. 1852.

Imperfect stage of Hypocrella turbinata (Berk.) Petch

Hosts: Aleurocanthus woglumi Ashby  
 Ceroplastes sp.  
 Ceroplastes floridensis Comst.  
 Coccidae

P. R.  
 P. R.  
 Fla.  
 Fla.,\* La.,\* C. Z.,\*  
 Cuba, Dominican Republic,  
 Panama,\* P. R.  
 La.\*  
 Fla., La.,\* P. R.  
 P. R.\*

Coccus hesperidum L.  
 Lepidosaphes beckii (Newm.)  
 Vinsonia stellifera Westw.

ASCHERSONIA VIRIDANS (Berk. & Curt.) Soc. Mycol. de France,  
 Pat. Bul. 7: 48. 1891.

Imperfect stage of Hypocrella viridans (Berk. & Curt.) Petch

Host: Aleurodididae

Cuba,\* P. R.

ASCHERSONIA ZAMIA Webber (Miss. name)

Host: Diaspis zamiae Morg.

Fla.\*

ASPERGILLUS SP.

Host: Harmolita sp.  
 Musca domestica L.  
 Pseudococcus sp.

Va.  
 Tex.  
 P. R.

ASPERGILLUS DEPAUPERATUS Petch Brit. Mycol. Soc. Trans. 16:  
 244. 1932.

Host: Tetranychus telarius (L.)

Kans.\*

ASPERGILLUS EFFUSUS Tiraboschi Ann. di Bot. (Rome) 7: 16. 1908.

Host: Apis mellifera L.

D. C.

ASPERGILLUS FLAVESCENS Bidan See Gee, P. W. and Massey, A. B.,

Aspergillus infecting Malacosoma at high temperatures.

Mycologia 4: 279-281. 1912.

Host: Malacosoma americana (F.)

S. C.

- ASPERGILLUS FLAVUS (Group) sensu Thom & Church The Aspergilli 198-207. 1926.
- Host: Apion occidentale Fall Mo.\*  
 Apis mellifera L. (widespread) Mich.  
 Gilpinia polytorum (Htg.)  
 Microplectron fuscipennis Zett. Maine\*  
 Mordellistena sp. Mo.\*  
 Palaeococcus rosae (R. & H.)  
 Pseudococcus boninsis (Kuw.) La., Barbados, Cuba,  
 Dominican Republic, P.R.  
 Pseudococcus sp. La., Dominican Republic
- ASPERGILLUS FLAVUS-ORYZAE sensu Thom & Church The Aspergilli 198-207. 1926.
- Host: Apis mellifera L. D. C.
- ASPERGILLUS FUNIGATUS (Fres.) sensu Thom & Church  
 Host: Apis mellifera L. (Imported from Europe)
- Aspergillus glaucus (Lk.) See Thom & Church The Aspergilli 104. 1926.
- Host: Apis mellifera L.
- ASPERGILLUS FIDULANS (Fidan) Wint. Rabh. Krypt. Flora (2 auf.) Bd. 1, Abt. 2: 62. 1887.
- Host: Apis mellifera L.
- ASPERGILLUS NIGER v. Tiegh. Ann. Sci. Nat. (ser. 8) 5: 240. 1867.
- Syn: Sterigmatocystis nigra v. Tiegh. Soc. Bot. de France Bul. 24: 102-103. 1877.
- Host: Prodenia sp. Calif.
- ASPERGILLUS OCHRACEUS Wilhelm Beitrage z. Kennt. d. Pilzgattung Aspergillus Inaug. Diss. Strassburg, 66. 1877.
- Host: Apis mellifera L. Conn., D. C.
- ASPERGILLUS ORYZAE (Ahlburg) Cohn sensu Thom & Church The Aspergilli 198-207. 1926.
- Host: Apis mellifera L.
- ASPERGILLUS PARASITICUS Speare Hawaiian Sugar Planter's Expt. Sta. Path. & Phys. ser. Bul. 12: 38. 1912.
- Host: Apis mellifera L. D. C.  
 Diatraea saccharalis (F.) Cuba\*  
 Microbracon hebetor (Say) Calif.\*  
 Pseudococcus sp. Cuba\*  
 Pseudococcus boninsis (Kuw.)  
 Pyrausta nubilalis (Hbn.)



ASPERGILLUS SYDOWI (Bainier & Sartory) Thom & Church The  
Aspergilli 147-148. 1926.

Syn.: Sterigmatocystis sydowi Bainier & Sartory Ann. Mycol.  
11:25-29. 1913.

Host: *Anastrepha serpentina* (Wied.) Mexico\*

ASPERGILLUS TAMARII Kita Centralb. f. Bakt. Par. & Infek.  
Abt. II, 37: 433-452. 1913.

Host: *Atta singularis* (Guer.) Cuba\*

ATICHIA DOMINICANA Cotton Kew Bul. 1914: 59. 1914.

Host: *Lepidosaphes beckii* (Mewn.) Dominican Republic

# BEAUVIERIA SP.

Hosts: *Agrotis badinodis* Grote

*Agrotis orthogonia* Morr.

*Carpocapsa pomonella* (L.) Del., Va.\*

*Chalepus dorsalis* Thunb. Va.\*

*Feltia annexa* (Treit.)

*Feltia ducens* Walk.

*Feltia gladiaria* (Morr.)

*Heliophila* sp. Dominican Republic

*Polia renigera* (Steph.)

*Prodenia ornithogalli* Guen.

BEAUVIERIA BASSIANA (Bals.) Vuill. Soc. Bot. de France  
Bul. 59: 34-40. 1912.

Syn.: *Botrytis bassiana* Bals. Linnaea 10: 609. 1835-6.

Sporotrichum larvatum Pk. N. Y. State Mus. Rpt.  
32:44. 1879.

Sporotrichum larvicolum Pk. N. Y. State Mus. Bul.

1 (No. 2): 18. 1887. For discussion of this and  
the preceding species see Fetch Brit. Mycol. Soc.  
Trans. 19: 188-189. 1935.

Sporotrichum entonophilum Pk. N. Y. State Mus. Rpt.  
50: 116. 1897.

Hosts: *Agriotes mancus* (Say) Maine\*

*Anopheles quadrimaculatus* Say Fla.\*

*Aphodius finetarius* (L.) Canada

*Automeris* sp.

*Bombyx mori* L. Dominican Republic

*Bruchus pisorum* (L.) Oreg.

*Carpocapsa pomonella* (L.) Del., N. Y., Va.\*

*Cicada* sp. Va.\*

*Cranbus* sp. Ind.\*

*Curculio caryae* (Horn) Ala.

*Diacrisia virginica* (F.) Colo.

*Diatraea crambidoides* (Grote) Ala.

*Diatraea saccharalis* (F.) La.\*

*Dyslobus decoratus* (Lec.) Wash.

*Euctheola rugiceps* (Lec.) Ark.

BEAUVERIA BASSIANA (Continued)

Hosts:	Heliophila sp.	Dominican Republic
	Heliothis armigera (Hbn.)	Conn.*
	Hypera punctata (F.)	Va.*
	Hylastinus obscurus. (Marshall)	Oreg.*
	Lepidoptera	Va.*
	Leptinotarsa decemlineata (Say)	Canada
	Ligyra gibbosa (Deg.)	Ark.*
	Magicicada septendecim (L.)	Va.*
	Nysius ericae (Schill.)	D. C.
	Popillia japonica Newm.	N. J.
	Pyrausta nubilalis (Hbn.)	Conn.,* Mass., Ohio,*
		Canada
	Scolytus multistriatus (Marshall)	N. J.*
	Sitona hispidula (F.)	Va.*
	Staphylinidae	Va.*

BEAUVERIA DENSA (Lk.) Vuill. Soc. Bot. de France Bul.  
59: 34-40. 1912.

Syns: Sporotrichum densum Lk. Mag. Ges. naturf.  
Freunde Berlin 3: 13. 1809.

Botrytis tonella Delacr. Jour. d'Agr. pratique 165. 1891.

Hosts:	Arachnida	
	Autographa brassicae (Riley)	Ma.,* Colo.*
	Calandra maidis (Chittn.)	
	Dasychira groenlandica Honeyer	
	Hadenococcus subterraneus Scudd.	
	Hymenoptera	
	Melolontha vulgaris F.	
	Muscidae	Kans.
	Phyllophaga fusca (Froel.)	
	Tipula infusata Loew	
	Tipulidae	

BEAUVERIA DORYPHORAE Poisson & Patay Acad. des.Sci. Paris  
Compt. Rend. 200: 961.  
1935.

Host: Leptinotarsa decemlineata (Say) Canada

BEAUVERIA GLOBULIFERA (Speg.) Pic. Montpellier Ecole Natl.  
d'Agr. Ann. 13: 121-  
248. 1914.

Syns: Sporotrichum globuliferum Speg. Anal. Soc. Sci.  
Argentina 9: 278-285. 1880.

Hosts:	Anthonomus fulvus (Lec.)	Kans.
	Aphanus umbrosus (Dist.)	Kans.
	Aphodius sp.	Kans.
	Autographa brassicae (Riley)	Ma.,* Colo.*
	Blissus lirtus Montd.	N. Y.*
	Blissus leucopterus (Say)	Kans., Nebr., Ohio,*
		Canada
	Camponotus herculeanus pennsylvanicus (Deg.)	Kans.

BEAUVERIA GLOBULIFERA (Continued)

Hosts: Carposapsa pomonella (L.)	Kans.
Ceratomegilla fuscilabris (Muls.)	Kans.
Chaetocnema pulicaria Melsh.	Va.*
Cicadellidae	La.,* P. R.
Coccinellidae	La.
Coccus hesperidum L.	D. C.
Conotrachelus crinaceus Lac.	Kans.
Conotrachelus nenuphar (Hbst.)	Kans.
Corcoris batatas (F.)	P. R.*
Corythucha gossypii (F.)	Kans.
Cucujidae	Kans.
Curculionidae	Kans.
Cylas formicarius (F.)	La., Miss.*
Datana sp.	Kans.
Diabrotica longicornis (Say)	Middle West and East
Diabrotica soror Lec.	
Diabrotica vittata (F.)	
Diaspis zamiae Morg.	
Diatraea saccharalis (F.)	Tex.*
Disonychia xanthomelaena (Dalm.)	Kans.
Disonychia pennsylvanica (Ill.)	Ill.
Disonychia triangularis (Say)	Kans.
Dorytomus sp.	Kans.
Drosophila sp.	P. R.
Empoasca sp.	Dominican Republic
Empoasca fabae (Harr.)	
Epicauta lermiscata F.	La.*
Epilachna varivestis Muls.	N. Mex., Va.*
Estignene acraea (Drury)	Kans.*
Formicidae	Kans.
Galerucella xanthomelaena (Schr.)	Conn., D. C., Va., Wash.
Gryllus sp.	Kans.
Halictus illinoisensis Robts.	Kans.
Heliothus armigera (Hbn.)	Kans.
Henaris sp.	Kans.
Hippodamia convergens Guer.	Kans.
Hypera punctata (F.)	Utah
Hyphantria sp.	Kans.
Laphygma frugiperda (A. & S.)	Tex.*
Lebia bivittata F.	Kans.
Macronoctua onusta Grote	Wis.
Magdalenia septendecim (L.)	
Melanoplus sp.	Kans.
Melanoplus differentialis (Thos.)	Kans.
Melanoplus femur-rubrum (Dug.)	Kans.
Melanoplus mexicanus Sauss.	Kans.
Melanoplus mexicanus spretus (Walsh)	Kans.
Monocrepidius sp.	Kans.
Murgantia histrionica (Hahn)	
Musca domestica L.	Kans.



BEAUVERIA GLOBULIFERA (Continued)

Hosts: Nabis roseipennis Reut.	Kans.
Nysius ericae (Schill.)	Ky.
Olibrus sp.	Kans.
Pagasa fusca (Stein.)	
Parandra brunnea (F.)	
Pentatomidae	Va.,* Kans.
Phalaenidae	Kans.
Phyllophaga sp.	Kans.
Phyllophaga inversa Horn	Kans.
Phymatidae	Kans.
Pieris rapae (L.)	D. C.*
Plusia sp.	Ky.
Polydesmus sp.	
Polygonia interrogationis (F.)	
Protoparce sexta (Johan.)	
Protoparce sp.	Ky.
Pyrausta nubilalis (Hbn.)	Kans., Ga.*
Rodolia cardinalis (Muls.)	Kans., N. Y.*
Samia cecropia (L.)	
Schistocerca americana (Drury)	Ky.
Selenothrips rubrocinctus (Giard)	Dominican Republic
Sitona hispidula (F.)	Va., Md.
Solubea pugnax (F.)	
Sphingidae	Kans.
Staphylinidae	Wash.*
Stilpnotia salicis (L.)	Mass.*
Tenthredinidae	Kans.
Thripidae	P. R.
Thyanta custator (F.)	Kans.
Trichobaris texana Lec.	Kans.
Vespa sp.	

BEAUVERIA MELOLONTHAE (Sacc.) Cif. Estacion Agron. de  
Moca Bul. (ser. B. Bot.)  
14: 169. 1929.

Syn.: Botrytis melolonthae Sacc. Ann. Mycol. 10: 320. 1912.

Host: Not given Dominican Republic

BEAUVERIA VEXANS (Pettit) Fetch Brit. Mycol. Soc. Trans.  
10: 240 and 251. 1926.

Syn.: Isaria vexans Pettit N. Y. (Cornell) Agr. Expt.  
Sta. Bul. 97: 365-368. 1895.

Hosts: Blissus leucopterus (Say)

Euphydryas phaeton Drury

Formicidae

Phyllophaga sp.

Pieris rapae (L.)

Schizura concinna (A. & S.)

Thyridopteryx ophemeriformis (Haw.)

N. C.

**BOTRYTIS SP.**

Host: *Schistocerca paranensis* Burm.

Mexico

Botrytis bassiana Bals. See Beauveria bassiana (Bals.) Vuill.

Botrytis melolonthae Sacc. See Beauveria melolonthae (Sacc.) Cif.

Botrytis rileyi Farl. See Spicaria rileyi (Farl.) Charles

Botrytis tenella Delacr. See Beauveria densa (Lk.) Vuill.

Boudierella coronata Cost. See Entomophthora coronata (Cost.)  
Kevorkian

**CALONECTRIA HIRSUTELLAE** Petch Brit. Mycol. Soc. Trans.  
21:49. 1937.

Host: Cicadellidae

N. C.

**CEPHALOSPORIUM SP.**

Hosts: Araneidae

*Byturus unicolor* Say

Coccidae

Mexico

Wash.\*

Fla.,\* P. R.

**CEPHALOSPORIUM LECANII** Zimm. Indische Cult. (Teysmannia)  
9:240-243. 1899.

Syn.: Verticillium lecanii (Zimm.) Viegas (Sao Paulo)

Inst. de Cafe Rev. 14:754-772. 1939.

Hosts: *Aspidiotus destructor* Sign.

Dominican Republic,  
P. R.

*Ceroplastes floridensis* Comst.

*Coccus hesperidum* L.

*Coccus mangiferae* (Green)

*Coccus* sp.

Fla., Dominican Republic,  
P. R.

*Coccus viridis* Green

Fla.,\* Cuba, Dominican  
Republic, P. R.

*Icerya purchasi* Mask.

Cuba,\* P. R.\*

*Lecanium* sp.

Fla.

*Lecanium nigrofasciatum* Perg.

La.

*Protopulvinaria pyriformis* (Ckll.)

*Pseudaonidia duplex* (Ckll.)

La.

*Pseudococcus nipae* (Mask.)

P. R.

*Saissetia hemisphaerica* (Targ.)

Dominican Republic,  
P. R.\*

*Saissetia nigra* (Nietn.)

*Saissetia oleae* (Bern.)

P. R.

**CEPHALOSPORIUM LONGISPORUM** Petch Brit. Mycol. Soc. Trans.  
10:171. 1925.

Host: On unidentified host.

P. R.

CLADOBOTRYUM HETEROCLADUM (Penz.) Petch Brit. Mycol. Soc.  
Trans. 16: 233. 1932.  
Syn.: Verticillium heterocladum Penz. (non Fawcett) Michelia  
2: 462. 1882.

CLADOSPORIUM SP.

Host: Aonidiella aurantii (Mask.)  
Aphididae

Calif.\*  
Calif., D. C., N. C.,  
N. Y., Ohio  
P. R.\*

Asterolecanium bambusae Boisd.  
Chauliognathus pennsylvanicus Deg.  
Diacrisia virginica (F.)  
Dialeurodes citri (Ashm.)  
Hormaphis hamamelidis Fitch  
Icerya purchasi Mask.  
Pseudonidia duplex (Ckll.)  
Sigph flava (Forbes)

Colo.  
Fla., La.\*  
Fla.\*  
La.\*  
La.\*  
Cuba,\* P. R.

CLADOSPORIUM APHIDIS Thuem. Osterr. Bot. Ztschr. 27:  
12. 1877.

Hosts: Aphis sp.

Fla., N. Y., N. C.,  
Ohio,\* Tex.  
Calif.,\* Colo., P. R.\*  
Calif.\*  
Ind.  
N. Y.  
Costa Rica,\* P. R.  
Miss.  
P. R.  
Maine\*

Aphis gossypii Glov.  
Aphis spiraeicola Patch  
Blissus leucopterus (Say)  
Brevicoryne brassicae (L.)  
Cicadellidae  
Icerya purchasi Mask.  
Myzus persicae (Sulz.)  
Orchestes rufipes Lec.

CLADOSPORIUM HERBARUM (Pers.) Lk. Mag. Gesell. Naturf.  
Freunde Sitzber Ber-  
lin 7: 37. 1816.  
Syn.: Dematium herbarum Pers. Tent. Disp. Method.  
Fung., p. 75. 1797.

Host: Icerya purchasi (Mask.)  
Melanocallis caryaefoliae (Davis)

La.\*  
Ga.

Clavaria brachiata Batsch. See Isaria brachiata (Batsch) Schum.

Clavaria sobolifera Hill. See Cordyceps sobolifera (Hill) Sacc.

Conidiobolus villosus Martin. See Entomophthora coronata (Cost.)  
Kevorkian

CORDYCEPS SP.

Hosts: Aeolus dorsalis (Say)  
Apion sp.  
Camponotus abdominalis Roger  
Cicadidae

Canada  
Mo.  
D. C.,\* La.\*



CORDYCEPS SP. (Continued)

Hosts: Desmoris fulvus (Léc.)	Mo.*
Diatraea saccharalis (F.)	Guadeloupe
Diptera	Ala.,* Mo.*
Epilachna borealis (F.)	
Heliothis armigera (Hbn.) Immature	Va.*
Micropezidae	Cuba*
Polia legitima (Grote)	
Scapteriscus acletus R. & H.	Fla.,* S. C.*
Sphenophorus sp.	
Tibicen vitripennis (Say)	La.

Cordyceps acicularis Rav. See Ophiocordyceps acicularis (Rav.)  
Petch

Cordyceps albella (Berk. & Curt.) Mass. Ann. Bot. 9: 39.  
1895. See Penicillium albellum  
(Mass.) Petch

Cordyceps albida Berk. & Curt. See Cordyceps albella (Berk.  
& Curt.) Mass.

CORDYCEPS AMAZONICA P. Henn. Hedwigia 43: 247. 1904.  
Host: Blattidae

British Honduras

Cordyceps arachnophila Thax. See Torrubiella gibellulae  
Petch

Cordyceps barberi Giard. See Hirsutella barberi (Giard)  
Petch

CORDYCEPS BELIZENSIS Mains Mycologia 32: 21. 1940.  
Host: Lepidoptera

British Honduras

Cordyceps calocercides Berk. & Curt. See Ophiocordyceps  
caloceroides (Berk. & Curt.) Petch

Cordyceps carolinensis Berk. & Rav. See Ophiocordyceps  
acicularis (Rav.) Petch

Cordyceps cicadae (Miq.) Mass. See Cordyceps soboliferae (Hill)  
Sacc.

Cordyceps clavulata (Schw.) Ell. & Ev. See Ophiocordyceps  
clavulata (Schw.) Petch

Cordyceps cockerellii (Ell. & Ev.) Ell. See Cordyceps sphingum  
(Schw.) Berk. & Curt.

CORDYCEPS CURCULIONUM (Tul.) Sacc.

Host: Curculionidae. See Petch Brit. Mycol. Soc. Trans.  
21: 39-40. 1937.

Honduras

- CORDYCEPS DIPTERIGENA Berk. & Br. Linn. Soc. Jour. 14:  
111. 1873.  
Perfect stage of Hymenostilbe dipterigena Fetch Brit.  
Mycol. Soc. Trans. 16: 212-213.  
1932.  
Hosts: Muscidae Miss.,\* N. C., Tenn.,  
Costa Rica, Panama, P. R.  
Cochliomyia macellaria (F.) P. R.  
Diptera  
Drosophila sp.  
Mydaea sp. P. R.
- CORDYCEPS DITMARI Quel. Soc. Bot. de France Bul. 24:  
317. 1877.  
Syn.: C. langloisii Ell. & Ev. North Amer. Pyren., p.  
62. 1892.  
Hosts: Eumenes-sp. La.  
Vespula vulgaris L.
- CORDYCEPS ELONGATA Fetch Brit. Mycol. Soc. Trans.  
21: 34-67. 1937.  
Imperfect stage Hirsutella gigantea Fetch  
Hosts: Aconicta americana (Harr.) N. C., Maine, Tenn.  
Lepidoptera British Honduras
- Cordyceps formicivora Schroet. See Ophiocordyceps  
unilateralis (Tul.) Fetch  
Cordyceps gigantea (Mont.) Mass. See Icaria gigantea Mont.
- CORDYCEPS GRACILIS Mont. & Dur. Flora Algeria 1: 449. 1846-69.  
Hosts: Unidentified hosts Fla.,\* Ind., N. Y.  
Elateridae Mich.  
Lepidoptera Mich.
- CORDYCEPS HESLERI Mains Elisha Mitchell Sci. Soc. Jour.  
55: 125. 1939.  
Host: Cicada sp. Tenn.
- Cordyceps humberti Robin. See Ophiocordyceps humberti  
(Robin) Fetch
- CORDYCEPS INSIGNIS Cke. & Rav. Grevillea 12: 38. 1883.  
Perfect stage of Hirsutella saussurei (Cke.) Speg.  
Host: Coleoptera N. Y.,\* S. C.
- CORDYCEPS ISARIOIDES Curt. Ann. Bot. 9: 36. 1895.  
Host: Lepidoptera
- Cordyceps langloisii Ell. & Ev. See Cordyceps ditmari Quel.
- CORDYCEPS LLOYDII Fawcett Ann. Bot. Hist. (ser.5) 13: 316. 1886.  
Syn.: Cordyceps sherringtonii Mass. Ann. Bot. 5: 510. 1891.  
Perfect stage of Hymenostilbe formicarum Fetch  
Host: Camponotus sp. Panama

- CORDYCEPS MACULARIS (Mains) Mich. Acad. Sci., Arts and  
Letters, Mains' Papers 25:  
82. 1940.  
Syn.: *Ophiocordyceps macularis* Mains Amer. Phil. Soc.  
Proc. 74: 269-270. 1934.  
Host: Scarabaeidae Mich., N. Y.
- CORDYCEPS MELOLONTHAE (Tul.) Sacc. *Michelia* 1: 320. 1878.  
Syn.: *Torrubia melolonthae* Tul. Sel. Fung. Carp. 3: 12. 1865.  
*Cordyceps rickii* Lloyd Mycol. Writings 6: 911-916. 1920.  
Hosts: Coleoptera Conn. to Ohio,  
Phyllophaga spp. Mass., Mich., Tenn.\*  
Phyllophaga fusca (Froel.) Ill., Minn.
- CORDYCEPS MICHIGANENSIS Mains Elisha Mitchell Sci. Soc.  
Jour. 55: 123. 1939.  
Host: Scarabaeidae Mich., N. C., Tenn.,\*  
Ontario
- CORDYCEPS MILITARIS (L.) Lk. Handb. 3: 347. 1833.  
Imperfect stage *Cephalosporium* sp., according to Petch  
Brit. Mycol. Soc. Trans.  
20: 216-224. 1936.  
Syn.: *Clavaria militaris* L. Species Plantarum 1182. 1753.  
*Torrubia militaris* Tul. Sel. Fung. Carp. 3: 6. 1865.  
Hosts: *Isia isabella* (A. & S.) Maine, N. H.,  
N. J., Pa., Wis.  
Lepidoptera Maine, N. C.  
Phyllophaga sp. Ill.\*  
Phyllophaga fervida (F.)  
Unidentified hosts Calif., Iowa, Md.,\*  
Mass., Maine,\* Mo.,  
N. C.,\* N. H.,\* S. Dak.,  
Tenn.,\* Va.,\* W. Va.,\*  
Canada,\* P. R.
- CORDYCEPS MONTICOLA Mains Mycologia 32: 310. 1940.  
Host: *Gryllotalpa hexadactyla* Perty Tenn.\*
- CORDYCEPS MYRMECOPHILA Ces. Bot. Ztschr. 4: 877. 1846.  
Hosts: Formicidae Wash.
- CORDYCEPS OPHIOGLOSSOIDES (Ehr. ex Fr.) Lk. Handb. 3: 347.  
1833.  
Host: Hexapoda
- CORDYCEPS PALUDOSA Mains Mich. Acad. Sci. Papers 25:  
83. 1940.  
Host: Lepidoptera Mich.



CORDYCEPS PALUSTRIS Berk. & Br. Linn. Soc. Jour. 1:159. 1857. S. C.  
Host: Coleoptera

Cordyceps peltata Wakef. See Ophiocordyceps peltata  
(Wakef.) Petch

Cordyceps pistillariaeformis Berk. & Br. See Ophiocordyceps  
clavulata (Schw.) Petch

CORDYCEPS PITIEPI Bomm. & Rouss. Soc. Roy. de Bot. de Belg.  
Bul. 35: 160. 1896.  
Host: Coleoptera Costa Rica

CORDYCEPS PUIGGARII Speg. Acad. Nac. de Cien. Cordoba,  
Bol. 11: 535. 1889.  
Host: Hexapoda

Cordyceps ravenelii Berk. & Curt. See Ophiocordyceps acicularis  
(Rav.) Petch

Cordyceps rickii Lloyd. See C. melolonthae (Tul.) Sacc.

Cordyceps sherringtonii Mass. See Cordyceps lloydii Fawcett

CORDYCEPS SMITHII Mains Elisha Mitchell Sci. Soc. Jour.  
55: 127-129. 1939.  
Host: Vespa sp. Tenn.

CORDYCEPS SOBOLIFERA (Hill ex Berk.) Sacc. Michelia 1: 321. 1878.

Perfect stage of Isaria cicadae Miq. Bul. Sci. Phys. & Natur.  
Neerlande 1: 85-86. 1838.

Syns: Clavaria sobolifera Hill Roy. Soc. Phil. Trans. 53:  
271-4. 1764.

Cordyceps cicadae (Miq.) Mass. Ann. Bot. 9: 38. 1895.

Hosts: Cicada sp. Cuba\*, Dominican Republic, Mexico\*, West Indies

Coleoptera  
Scarabaeidae

CORDYCEPS SPECIOCEPHALA (Klotzsch) Oke. Vegetable Wasps and  
Plant Worms, p. 40. 1892.

Syn.: Sphaeria speciocephala Klotzsch Hooker's Jour. Bot.  
(London) 2: 206. 1843.

Perfect stage of Hymenostilbe speciocephala (Ditm.) Petch

Hosts: Polistes americana (F.)

Polistes lineatus (F.)

Tachytes argentipes Smith

Vespa sp.

P. R.

P. R.

Fla.,\* Tenn.,\* Cuba,  
P. R.,\* West Indies

CORDYCEPS SPHINGUM (Schw.) Berk. & Curt. Linn. Soc. Jour.

10: 375. 1868.

Syn.: Torrubia sphingum Tul. Fung. Carp. 3: 12. 1865.

Ophionectria cockerellii Ell. & Ev. Inst. Jamaica

Jour. 1: 141. 1892.

Cordycens cockerellii (Ell. & Ev.) Ell. Inst.

Jamaica Jour. 1: 180. 1893.

Hosts: Cocytius antaeus Drury

Pholus vitis L.

Sphinx sp.

Unidentified larvae

N. C., Tenn.

British Honduras

N. H., N. J. to N. C.,

Tenn., Jamaica

CORDYCEPS STYLOPHORA Berk. & Br. Linn. Soc. Jour. 1: 158.

1857.

Hosts: Carabidae

Coleoptera

Dendroides bicolor Newm.

Elateridae

Unidentified larvae

N. Mex.

Mich., N. Y., S. C., Tenn.

Mich., N. Y., S. C.

CORDYCEPS SUBMILITARIS P. Henn. Hedwigia 36: 222. 1897.

Host: Coleoptera

British Honduras

CORDYCEPS SUBSESSILIS Petch Brit. Mycol. Soc. Trans. 21: 39.

1937.

Host: Larvae of Coleoptera

N. C., Tenn.

CORDYCEPS SUPERFICIALIS (Pk.) Sacc. Syll. Fung. 2: 574. 1883.

Syn.: Torrubia superficialis Pk. N. Y. State Mus. Rpt. 28:

70. 1875.

Hosts: Coleoptera

Conn., Mass., Mich.,

N. Y., Ontario

Hexapoda

Unidentified larvae

Mass.\*

CORDYCEPS THAXTERI Mains Elisha Mitchell Sci. Soc. Jour. 55:

120-121. 1939.

Host: Araneida

N. C., Tenn.

Cordyceps unilateralis (Tul.) Sacc. See Ophiocordyceps

unilateralis (Tul.) Petch

CORDYCEPS VARIABILIS Petch Brit. Mycol. Soc. Trans. 21:

42-44. 1937.

Hosts: Coleoptera

Maine, Tenn., Wis.

Elateridae

N. Y.

CORDYCEPS VIPERINA Mains. Mycologia 29: 674-677. 1937.

Host: Coleoptera

N. Y., Tenn., Ontario,

Nova Scotia, British Honduras

Cordyceps wittii P. Henn. See Ophiocordyceps caloceroides (Berk. & Curt.) Petch

Coremium gracilis Petch. See Sticaria gracilis Petch

Corticium lepricurii Mont. See Septobasidium lepricurii (Mont.) Pat.

Corticium pannosum Fr. See Septobasidium pannosum (Fr.) Bres.

CYLINDROCOLLA DENDROCTONI Fk. Field Columbian Mus. Pub. 1: 99. 1896.

Host: Dendroctonus frontalis Zimm. W. Va.

Daedalea rhabbarbarina Mont. See Septobasidium rhabbarbarium (Mont.) Bres.

DESMIDIOSPORA MYRMECOPHILA Thaxter Bot. Gaz. 16: 203. 1891.

Host: Camponotus herculeanus L. Conn.  
Formica sp.

# ENTOMOPHTHORACEAE

Recognizing the fact that the present method of separating the genera Empusa and Entomophthora is not satisfactory, it has seemed best to follow Thaxter's assignment of species as given in his monograph of "The Entomophthoraceae of the United States." Thaxter recognized the taxonomic difficulties presented by the family and discussed the subject on pages 152-155.

## EMPUSA SP.

Hosts: <u>Actebia fennica</u> (Tausch.)	Canada
<u>Aphididae</u>	Calif.*
<u>Aphis spiraeicola</u> Patch	Fla.
<u>Autographa brassicae</u> (Riley)	Fla.*
<u>Blissus leucopterus</u> (Say)	Kans.
<u>Camula pallucida</u> (Scudd.)	Canada
<u>Chorizagrotis auxiliaris</u> (Grote)	Kans.*
<u>Crambus</u> sp.	Ontario
<u>Diaerotica soror</u> Lec.	
<u>Estigmene acrea</u> (Drury)	
Diptera	Fla.,* Ohio, Pa.*
<u>Lygus communis novascotiensis</u> Knight	Nova Scotia
<u>Peregrinus maidis</u> (Ashm.)	P. R.
<u>Trodenia</u> sp.	
<u>Rhopalosiphum prunifoliae</u> (Fitch)	Ky.
<u>Rhopalosiphum pseudobrassicae</u> (Davis)	Tex.
<u>Scotophaga</u> sp.	Wash.*
<u>Tomaspsis saccharina</u> Dist.	West Indies

EMPUSA AMERICANA Thax. Boston Soc. Nat. Hist. Mem. 4: 179. 1888.

Hosts: Calliphora sp. Wis.  
Calliphora vomitoria (L.) Ala.,\* N. C., New Eng.



EMPUSA AMERICANA Thax. (Continued)

Diptera	Conn., * D. C., * N. Y.*
Lucilia caesar (L.)	N. C., New Eng.
Musca domestica L.	N. C., New Eng.
Muscina stabulans (Fall.)	Tenn.*
Phormia regina (Meig.)	Tex.*

EMPUSA APHIDIS Hoffman In Fres. Senckenb. Naturf. Gesell.  
Abhandl. 2: 201. 1858.

Hosts: Aphididae	N. Y., Mass.
Aphis sp.	D. C., * Ga., * Maine, Minn., N. C., N. H., N. Y., * Va., * Wis.
Aphis forbesi Weed	N. C.*
Aphis pomi Deg.	
Aphis sambuci L.	Va.
Blissus sp.	Ind., * Kans.
Blissus leucopterus (Say)	Ind., * Neb.
Brevicoryne brassicae (L.)	Va.*
Callipterus trifolii Monell	
Hornaphis hamamelidis Fitch	
Macrosiphum allii Jackson	Va.
Macrosiphum lactucae (L.)	Del.
Macrosiphum pisi (Kltb.)	Calif., * Oreg., Va., * Wis.
Myzus persicae (Sulz.)	
Periphygus betae Doane	Calif.
Phorodon humuli (Schr.)	
Rhopalosiphum pseudobrassicae (Davis)	

EMPUSA APICULATA Thax. Boston Soc. Nat. Hist. Mem. 4:  
163-164. 1888.

Hosts: Deltoidinae	Maine, N. C.
Diptera	Maine, N. C.
Hemiptera	Maine, N. C.
Hyphantria cunea (Drury)	
Hyphantria textor Harr.	Maine, N. C.
Petrophora sp.	Maine, N. C.
Tortrix sp. (adult)	Maine, N. C.
Typhlocyba sp.	Maine, N. C.

EMPUSA APICULATA Thax. var. MAJOR Thax. Boston Soc. Nat.  
Hist. Mem. 4: 164-165. 1888.

Hosts: Coleoptera	
Deltoidinae	
Empoasca papayae Oman	P. R.
Hyphantria textor Harr.	Tenn.
Ptilodactyla serricollis (Say)	N. C.

EMPUSA CAROLINIANA Thax. Boston Soc. Nat. Hist. Mem.  
4: 167. 1888.

Hosts: Diptera	N. C.
Tigula sp.	N. C.

EMPUSA CONGLOMERATA (Sor.)? Thax. Boston Soc. Nat. Hist. Mem.  
4: 162-163. 1888.

Hosts: Diptera  
Tipulidae

N. C., N. H.  
N. C., N. H.

EMPUSA CONICA Now. Acad. Sci. Krakow Proc., 1883: 153.

Hosts: Diptera  
Chironomidae  
Chironomus sp.

N. C., N. H.  
N. C., N. H.

EMPUSA CULICIS A. Braun. See Thaxter Boston Soc. Nat.  
Hist. Mem. 4: 157-158. 1888.

Hosts: Chironomus sp.  
Culex sp.  
Culicidae  
Simulium venustum Say

Wis.  
Mass., Maine, Mich.,  
N. H.  
Maine, Mass., N. H.  
N. H.

EMPUSA DIPTERICENA Thax. Boston Soc. Nat. Hist. Mem.  
4: 177. 1888.

Hosts: Mycetophilidae  
Diptera  
Tipula sp.

Maine, Mass., N. C., N. H.

EMPUSA ECHINOSPORA Thax. Boston Soc. Nat. Hist. Mem. 4:  
180-181. 1888.

Hosts: Diptera  
Mycobrous denticollis (Say)  
Sapronyza longipennis (F.)

Ark.,\* N. J.,\* Va.\*  
Kans.\*  
Maine, N. C., N. H.

EMPUSA ERUPTA Dustan Acadian Ent. Soc. Proc. 9: 31.  
1924.

Hosts: Lygus communis novascotiensis Knight  
Pleglognathus sp.

Nova Scotia\*  
Nova Scotia

EMPUSA FRESSENI Now. Acad. Sci. Krakow Proc., 1883: 153.

Hosts: Aphis pomi Deg.  
Aphis spiraeicola Patch  
Hemiptera  
Hexapoda  
Myzus persicae (Sulz.)  
Perogrinus maidis (Ashm.)  
Periphyllus lyropictus (Koss.)  
Phenacoccus sp.  
Pseudococcus citri (Risso)  
Pseudococcus nipae (Mask.)

Maine, Mass., N. C.  
Fla.  
Cuba (?)  
Fla., P. R.  
N. H.\*  
P. R.  
La.\*  
P. R.

EMPUSA GEOMETRALIS Thax. Boston Soc. Nat. Hist. Mem.  
4: 170-171. 1888.

Hosts: Epithecia sp.  
Lepidoptera  
Petrophora sp.  
Thera sp.

Maine  
Maine  
Maine

EMPUSA GRACILIS Thax. Boston Soc. Nat. Hist. Mem. 4:  
185-186. 1888.

Hosts: Diptera

N. C.

EMPUSA GRYLLI (Fres.) Now. Acad. Sci. Krakow Proc., 1883: 153.

General distribution.

Conn., D. C.,  
Iowa, Maine, Mass.,  
N. C., N. H., N. Y.,  
Ohio.

Hosts: Agrotis sp.

Arctidae

Cannula pellucida (Scudd.)

Ceuthophilus sp.

Diacrisia virginica (F.)

Diptera

Dissosteira carolina (L.)

Va.\*

Draeculacephala nollipes (Say)

Estigmene acraea (Drury)

Maine\*

Hyphantria cunea (Drury)

Hyphantria textor Harr.

Isia isabella (A. & S.)

Malacosoma sp.

Malacosoma americana (F.)

Melanoplus sp.

S. Dak.,\* Wis., Canada

Melanoplus bivittatus (Say)

Minn., Canada

Melanoplus differentialis (Thos.)

Iowa

Melanoplus femur-rubrum (Deg.)

Canada

Melanoplus mexicanus (Sauss.)

Nev.\*

Melanoplus mexicanus spretus (Walsh)

Musca domestica L.

W. Va.

Muscidae

Notolophus antiqua L.

Protoparce sexta (Johan.)

Rhagoletis completa Cress.

Calif.\*

Tipula flavicans F.

Va.\*

Trimerotropis maritima (Harr.)

EMPUSA LAGENIFORMIS Thax. Boston Soc. Nat. Hist. Mem.  
4: 169. 1888.

Hosts: Aphis sp.

Maine, Mass., N. C.

Hemiptera

EMPUSA LAMPYRIDARUM Thax. Boston Soc. Nat. Hist. Mem.  
4: 169-170. 1888.

Host: Chaulioognathus pennsylvanicus Deg.

N. C.

EMPUSA LECANII Zirm.'s Lands. Plantentuin Meded. 44: 25-27.

1901. See Petch Brit. Mycol. Soc.

Trans. 11: 254-258. 1926.

Host: Pseudococcus citri (Risso)

La.



EMPUSA MONTANA Thax. Boston Soc. Nat. Hist. Mem. 4:  
180. 1888.

Hosts: Chironomus sp.  
Diptera

N. H.

EMPUSA MUSCAE Cohn Nova Acta Leopoldina 25: 301. 1855.

General in the United States

Hosts: Calliphora vomitoria (L.)  
Chicrops assimilis Macq.  
Diptera  
Drosophila melanogaster Meig.  
Drosophila repleta Wollaston  
Erepeodes volucris O. S.  
Kolla similis (Walk.)  
Lucilia caesar (L.)  
Musca domestica L.

Nev.\*  
P. R.

D. C., Kans.\* Neb.,\*  
W. Va.

Oscinella sp.  
Pollenia rudis (F.)  
Syrphidae  
Syrphus sp.  
Tachina sp.

W. Va.

EMPUSA OCCIDENTALIS Thax. Boston Soc. Nat. Hist. Mem. 4:  
171-172.. 1888.

Hosts: Aphidiidae  
Hemiptera

Maine, Mass.  
Maine, Mass.

EMPUSA PAPILLATA Thax. Boston Soc. Nat. Hist. Mem. 4:  
166-167. 1888.

Host: Diptera

N. C., N. H.

EMPUSA PLANCHONIANA (Cornu) Petch Brit. Mycol. Soc. Trans.  
21: 34-36. 1937.

Syn.: Entomophthora planchoniana Cornu Soc. Bot. de France  
Bul. 20: 189. 1873.

Host: Aphidiidae

Wash.

Empusa planchoniana (Cornu) of Thaxter. See E. thaxteriana Petch

EMPUSA RHIZOSPORA Thax. Boston Soc. Nat. Hist. Mem. 4:  
183-185.. 1888.

Hosts: Neuroptera  
Phryganeidae

Maine, N. C.  
Maine, N. C., Wis.

EMPUSA SCIARAE Olive Bot. Gaz. 41: 192. 1906.  
Host: Sciara sp.

Wis.

EMPUSA SEPULCHRALIS Thax. Boston Soc. Nat. Hist. Mem. 4:  
181-182. 1888.

Hosts: Diptera  
Tipulidae

N. C., Tenn.  
N. C., Tenn.

EMPUSA SPHAEROSPERMA (Fres.) Thax. Boston Soc. Nat. Hist.  
Mem. 4: 172-175. 1888.

Syns.: Entomophthora sphaerosperma Fres. Bot. Ztg. 14:  
.883. 1856.

Entomophthora phytonomi Arthur. Bot. Gaz. 11:  
14-17. 1886.

Hosts: Agrilus bilineatus (Web.)

Maine, Mass., N. C.,  
N. H., N. Y.  
Maine

Colias philodice Godart

Culicidae

Curculionidae

Dissosteira carolina (L.)

Empoasca fabae (Harr.)

Ohio\*

Empoasca sp.

Fla.\*

Halictus sp.

Hypera nigrirostris (F.)

Hypera postica (Gyll.)

Hypera punctata (F.)

Utah  
Calif.,\* N. Y.,\* Ohio,  
Va.\*

Ichneumonidae

Fla.\*

Lamyridae

Laphygma frugiperda (A. & S.)

P. R.

Lepidoptera

Fla.\*

Loxostege sticticalis (L.)

Colo.\*

Macrosiphum solanifolii (Ashm.)

Fla.\*

Musca sp.

Tenn.

Musca domestica L.

N. H.

Muscidae

Mycetophilidae

Pieris brassicae (L.)

Pieris rapae (L.)

Psylla mali (Schmdb.)

Canada, Nova Scotia

Ptychodes trilineata (L.)

La.\*

Phyllophaga sp.

Kans.\*

Rhopobota naevana (Hbn.)

Mass.\*

Thrips tabaci Lind.

Mass.

Typhlocyba pomaria McAtee

W. Va.\*

EMPUSA TENTHREDINIS (Fres.) Thax. Boston Soc. Nat. Hist.  
Mem. 4: 162. 1888.

Syns.: Entomophthora tenthredinis Fres. Senckenb. Naturf.  
Gesell. Abhandl. 2: 201.  
1858.

Hosts: Hymenoptera  
Tenthredinidae

Maine

Maine

EMPUSA THAXTERIANA Petch Brit. Mycol. Soc. Trans. 21:

36. 1937.

Syn.: Empusa planchoniana (Cornu) of Thaxter Boston

Soc. Nat. Hist. Mem. 4:

165-166. 1888.

Hosts: Aphis sp.

Maine, Mass.

Hemiptera

Maine, Mass.

Macrosiphum pisi (Kltb.)

Oreg.

EMPUSA VARIABILIS Thax. Boston Soc. Nat. Hist. Mem. 4:

183. 1888.

Hosts: Diptera

N. C., Canada

Tipulidae

EMPUSA VIRESCENS Thax. Boston Soc. Nat. Hist. Mem. 4:

178. 1888.

Hosts: Actebia fennica (Tausch.)

Canada

Cirphis unipuncta (Haw.)

Lepidoptera

ENTOMOPHTHORA SP.

Hosts: Aphididae

Nev.\*

Fonteria corrugata (Wood)

Md.

Forficula sp.

Cuba\*

Harmolita tritici (Fitch)

Hylotoma berberidis (Schr.)

Morellia scapulata (Bigot)

P. R.\*

Porthetria dispar (L.)

Pseudococcus sp.

La.\*

ENTOMOPHTHORA ANISOPLIAT Metsch. See Metarrhizium anisopliae  
(Metsch.) Sor.

ENTOMOPHTHORA APHROPHORAE Rost. (?) Bot. Tidsskr. 20: 128.

1896; Petch, Brit. Mycol.

Soc. Trans. 19: 179-180.

1935.

Host: Aphrophora parallela (Say)

Pa.\*

ENTOMOPHTHORA AULICAE (Reich.) Wint. In Rabh. Kryptogam. (2  
auf.) bd. 1, abt. 1: 78.  
1884.

Hosts: Agrotis sp.

Amphipyra pyramidoides Guen.

Catocala sp.

Diacrisia virginica (F.)

Estigmene acrea (Drury)

Euchaetia segle Drury

Hyphantria textor Harr.

Isia isabella (A. & S.)

Lepidoptera

Malacosoma americana (F.)



ENTOMOPHTHORA AULICAE (Reich.) (Continued)

Hosts: *Notolophus antiqua* (L.)  
*Pachysphinx modesta* Harr.  
*Peridroma margaritosa* (Haw.)  
*Protoparce sexta* (Johan.)

Calif.

Hosts of *Empusa grylli* Fres., considered as a synonym by some authorities, are excluded. See Thaxter, p. 159.

ENTOMOPHTHORA BULLATA Thax. ined., Povah Mich. Acad. Sci.,  
 Arts and Letters.  
 Papers. 20: 120. 1935.

Hosts: *Calliphora* sp.  
*Cochliomyia macellaria* (F.) Det. by E. W. Laake, Nov.,  
 1935.

Mich.

Ga.\*

ENTOMOPHTHORA CHROMAPHIDIS Burger & Swain Jour. Econ. Ent.  
 2: 288. 1918.

Hosts: *Chromaphis juglandicola* (Kltb.)  
*Psocus* sp.

Calif.

Calif.

ENTOMOPHTHORA CORONATA (Cost.) Kevorkian Puerto Rico Univ.  
 Jour. Agr. 21:  
 191-198. 1937.

Syn.: *Boudierella coronata* Cost. Soc. Mycol. de France  
 Bul. 13: 38-43. 1897.  
*Conidiobolus villosus* Martin Bot. Gaz. 80: 311-318.  
 1925.

Host: *Nasutitermes* sp.

P. R.

ENTOMOPHTHORA FORFICULAE Giard Bul. Sci. de la France et  
 Belg. 20: 211-212. 1889.

Host: *Forficula auricularia* L.

Wash.\*

ENTOMOPHTHORA FUMOSA Speare U. S. Dept. Agr. Bul. 1117:  
 6. 1922.

Hosts: *Phenacoccus* sp.  
*Pseudococcus citri* (Risso)

Fla.\*

*Entomophthora phyttonomi* Arthur See *Empusa sphaerosperma* (Fres.)  
 Thax.

*Entomophthora planchoniana* Cornu See *Empusa planchoniana*  
 (Cornu) Petch

*Entomophthora sphaerosperma* Fres. See *Empusa sphaerosperma*  
 (Fres.) Thax.

EUROTIIUM SP.

Host: Chalcididae

FUMAGO VAGANS Pers. Mycol. Europe 1: 9. 1822; Sacc. Syll.  
 Fungorum 4: 547. 1886.

Host: Honeydew of Aphididae

Tex.

FUSARIUM SP.

Hosts: <i>Agrotis ypsilon</i> (Rott.)	Ill.
<i>Anastrepha mombinpraeoptans</i> Sein	Fla.*
<i>Anticarsia gemmatilis</i> (Hbn.)	Fla.*
<i>Aphis gossypii</i> Glov.	Colo.
<i>Aspidiotus perniciosus</i> Comst.	Miss.*
<i>Brachymerius sulcatus</i> (F.)	Pa.
<i>Campoplex pomonella</i> (L.)	N. Y.*
<i>Chalcidognathus pennsylvanicus</i> Deg.	Wash.
Coccinellidae	Ga.*
<i>Colletes eurythema</i> Bdv.	
<i>Conopia exitiosa</i> (Say)	Ga.*
<i>Cryodes devastator</i> (Bracc)	Ill.
<i>Cylas formicarius</i> (F.)	Miss.*
<i>Diatraea</i> sp.	Cuba*
<i>Diatraea saccharalis</i> (F.)	
Diptera	
<i>Ecitua subgothica</i> (Haw.)	Mo.*
<i>Harmolita</i> sp.	Va.*
<i>Heliothis amaigera</i> (Hbn.)	Conn.*
<i>Hypoderma bovis</i> (Deg.)	N. Dak.*
<i>Hypoderma lineatum</i> (DeVill.)	Fla., Iowa, N. Dak.
Lepidoptera	Va.
<i>Megacera septendecim</i> (L.)	D. C.,* Va.*
<i>Nephelodes emmedonia</i> (Cram.)	Ill.
<i>Oscinella frit</i> (L.)	Fla.
<i>Prodenia praefica</i> Grote	Calif.*
<i>Sternechus paludatus</i> Casey	N. Mex.*
<i>Zonosemata electa</i> (Say)	N. J.

FUSARIUM ALBYRODIS Petch Brit. Mycol. Soc. Trans. 7:  
156 and 164. 1921.

Hosts: <i>Dialeurodes citri</i> (Ashm.)	Fla.
<i>Lepidosaphes beekii</i> (Newm.)	

FUSARIUM EPICOCCUM McAlp. Fungus diseases of citrus trees in  
Australia, 113. 1899; Petch, Brit.  
Mycol. Soc. Trans. 7: 164. 1921.

Syns.: *Microcera parlatoriae* Trabut Bul. Agr. 1<sup>st</sup> Algerie  
Tunis 1332. 1907.

*Microcera curta* Sacc. Ann. Mycol. 7: 437. 1909.

*Microcera tonduzii* Pat. Soc. Mycol. de France  
Bul. 28: 142. 1912.

Host: *Aspidiotus* sp. Costa Rica

FUSARIUM LARVARUM Fekl. Mycol. Synb. 369. 1869.

Host: *Diatraea* sp.

FUSARIUM MERISMOIDES Cda. Icon. Fung. 2: 4. 1838.

Host: *Heliothis* sp. Kans.

FUSARIUM POAE (Pk.) Wr. In Wollenweber and Reinking Die  
Fusarien, p. 47. 1935.

Syn.: Sporotrichum poae Pk. N. Y. State Mus. Bul. 67:  
29. 1903.

Host: Musca domestica L.

Canada

FUSARIUM SOLANI (Mart.) App. & Wr. var. minus Wr. In  
Wollenweber & Reinking  
Die Fusarien, p. 13. 1935.

Host: Cylas formicarius (F.)

La.\*

Gibellula arachnophila Vuill. See G. araneorum (Schw.) Syd.

GIBELLULA ARANEORUM (Schw.) Syd. Ann. Mycol. 30: 390-391. 1932.

Syns.: Isaria araneorum Schw. Naturf. Gesell. zu Leipzig  
1: 126. 1822.

Isaria aspergilliformis Rostrup Vidensk. Medd.  
Naturhist. For. Kjobenhavn  
45: 92. 1893.

Gibellula arachnophila Vuill. Soc. Mycol. de France  
Bul. 27: 80. 1911.

Gibellula suffulta Speare Phytopathology 2: 137.  
1912.

Imperfect stage of Torrubiella gibellulae (Schw.)  
Petch

Hosts: Arancida

Mexico, N. H.,\* N. Y.,\*  
Va.,\* Vt.,\* P. R.\*

Attidae

Gibellula capillaris Morgan (Type of this species does not  
belong in this genus.)

Gibellula suffulta Speare See G. araneorum (Schw.) Syd.

Glenospora curtisii Berk. & Desmaz. See Septobasidium  
curtisii (Berk. & Desmaz.)  
Boed. & Stein.

Helicobasidium arboreum Couch See Septobasidium arboreum  
(Couch) Boed. & Stein.

HIRSUTELLA SP.

Hosts: Diatraea saccharalis (F.)  
Eucosma glomerana (Wlsm.)  
Pyrausta nubilalis (Hbn.)  
Tropaea luna (L.)  
Vespididae

Cuba\*  
Miss.\*  
Ohio  
Fla.\*  
P. R.



HIRSUTELLA BARBERI (Giard) Petch Brit. Mycol. Soc. Trans. 21: 57-58. 1937.

Syns.: Isaria barberi Giard Biol. Soc. Compt. Rend. 46: 823. 1894.

Cordyceps barberi Giard Ann. Bot. 9: 18. 1895.

Hosts: Diatraea saccharalis (F.)

La.,\* Barbados,  
Dominican Republic,  
Jamaica,\* P. R.  
P. R.

Diatraea lineolata Walk.

HIRSUTELLA CITRIFORMIS Speare Mycologia 12: 70. 1920.

Hosts: Fulgoridae  
Hymenoptera

P. R.  
Costa Rica\*

HIRSUTELLA FLOCCOSA Speare Mycologia 12: 69. 1920.

Host: Peregrinus maidis (Ashm.)

Jamaica

HIRSUTELLA GIGANTEA Petch Brit. Mycol. Soc. Trans. 21: 48. 1937.

Imperfect stage of Cordyceps elongata Petch

Host: Acrionicta americana (Harr.)

Conn., Maine, N. H.

HIRSUTELLA LECANIICOLA (Jaap) Petch Brit. Mycol. Soc. Trans. 18: 53. 1933.

Syn.: Isaria lecaniicola Jaap Bot. Ver. der Brandenb. Verhandl. 50: 49, 1908.

Imperfect stage of Ophiocordyceps clavulata (Schw.) Petch

Hosts: Coccidae

D. C., Fla., Md.,  
N. Y., Vt.,\* Va.

Locanium corni Bouche

HIRSUTELLA SAUSSURTI (Cke.) Speare Mycologia 12: 69. 1912.

Syn.: Isaria saussurci Cke. Vegetable Wasps and Plant Worms, p. 53. 1892.

Imperfect stage of Ophiocordyceps humberti (Robin) Petch

Hosts: Bothriocera sp.

Va.\*

Polistes americana (F.)

Polistes annularis (L.)

Polistes sp.

Vespidae

N. C.  
Calif.  
Mexico,\* Panama,\* P. R.\*

HIRSUTELLA SUBULATA Petch The Naturalist 1932: 45-49. 1932.

Hosts: Conopia pyri (Harr.)  
Carnocapsa pomonella (L.)

N. Y., Va.\*  
Del., D. C., Ind.,\* Va.\*

HORMODENDRON SP.

Hosts: Coccidae  
Selenaspidus articulatus (Morg.)

Barbados  
Barbados

Hymenochaete septobasidioides P. Henn. See Septobasidium septobasidioides (P. Henn.) Lloyd

Hymenochaete siparia Berk. & Curt. See Septobasidium siparium (Berk. & Curt.) Bres.

HYMENOSTILBE AMPULLIFERA Petch: Brit. Mycol. Soc. Trans. 21: 56. 1937.

Host: Dicranomyia rubipennis O. S.

N. C.

HYMENOSTILBE ARACHNOPHILA (Ditm.) Petch The Naturalist 1931: 249. 1931.

Syn.: Isaria arachnophila Ditm. In Sturn Deutschlands Flora (abt. 3) 1: 111. 1817.

Host: Araneida

HYMENOSTILBE DIPTERIGENA Petch Brit. Mycol. Soc. Trans. 16: 212-213. 1932.

Imperfect stage of Cordyceps dipterigena Berk. & Br.

Host: Diptera

Panama

HYMENOSTILBE FORMICARUM Petch Brit. Mycol. Soc. Trans. 16: 218. 1932.

Imperfect stage of Cordyceps lloydii Fawcett

Host: Formicidae

Panama

HYMENOSTILBE SPHECOPHILA (Ditm.) Petch Brit. Mycol. Soc. Trans. 21: 54-55. 1937.

Syn.: Isaria sphecophila Ditm. In Sturn Deutschlands Flora (abt. 3) 1: 115. 1817.

Imperfect stage of Cordyceps sphecocephala (Klotzsch) Cke.

Vespidae

P. R.

HYMENOSTILBE SPHINGUM (Schw.) Petch Brit. Mycol. Soc. Trans. 16: 217. 1932.

Syn.: Isaria sphingum Schw. Naturf. Gesell. zu Leipzig 1: 126. 1822.

Imperfect stage of Cordyceps sphingum (Schw.) Berk. & Curt.

Hosts: Erinnyis alope (Drury)

Sphingidae

Sphinx sp.

Unidentified hosts

P. R.

N. C., Tenn.

Hypocrea phyllogena Mont. See Hypocrella phyllogena (Mont.) Petch.

Hypocrea viridans Berk. & Curt. See Hypocrella viridans (Berk. & Curt.) Petch

HYPOCRELLA SP.

Hosts: *Coccus acuminatus* (Sign.) Honduras, P. R.  
*Dialeurodes citri* (Ashm.) P. R.\*

HYPOCRELLA CAULIUM (Berk. & Curt.) Soc. Mycol. de France

Pat. Bul. 30: 346. 1914.

Syn.: *Corticium caulium* Berk. & Curt. Acad. Sci. Jour.  
 2: 279. 1853.

Host: Coccidae Costa Rica, \* Honduras,  
 Panama, \* P. R.

HYPOCRELLA DISJUNCTA Seaver Mycologia 12: 93-98. 1920.

Syn.: *Hypocrella phyllogena* (Mont.) Speg. (?) See Petch  
 Brit. Mycol. Soc. Trans.  
 10: 194. 1925.

Host: *Dialeurodes citri* (Ashm.) P. R.  
*Lecanium* sp. (according to Petch) P. R.

HYPOCRELLA EPIPHYLLA (Mass.) Sacc. Syll. Fung. 11: 368. 1892.

Syn.: *Hypocrea epiphylla* Mass. Jour. Bot. 30: 164. 1892.

Perfect stage of *Aschersonia cubensis* Berk. & Curt.

Host: *Ceroplastes floridensis* Const. Fla.  
*Coccus hesperidum* L.  
*Coccus mangiferarum* (Green)  
*Eriococcinae*  
*Eucalymnatus tessellatus* (Sign.) Fla.  
*Lecanium* sp.  
*Lepidosaphes beckii* (Hewn.)  
*Protopulvinaria pyriformis* (Ckll.)  
*Saissetia hemisphaerica* (Targ.)  
*Toumeyella liriodendri* (Gmel.)

HYPOCRELLA LIBERA Syd. Ann. Mycol. 14: 85. 1916.

Syn.: *Hypocrella nectrioides* Thax. in litt. See Petch  
 Brit. Mycol. Soc. Trans. 10: 191-193.  
 1925.

Perfect stage of *Aschersonia aleyrodinis* Webber

Hosts: Coccidae Dominican Republic, Panama

*Hypocrella nectrioides* Thax. in litt. See *Hypocrella libera* Syd.

HYPOCRELLA PHYLLOGENA (Mont.) Petch Peradeniya, Ceylon, Roy.

Bot. Gard. Ann. 7: 226-232.  
 1921.

Syn.: *Hypocrea phyllogena* Mont. Ann. Sci. Nat. (ser. 2) 13:  
 340. 1840.

Perfect stage of *Aschersonia basicystis* Berk. & Curt.

Hosts: *Aleurodes* sp.  
*Dialeurodes citri* (Ashm.) P. R.

HYPOCRELLA TANONEAE Earle Mycologia 2: 87. 1910.

Host: Coccidae

P. R.



HYPOCRELLA TURBINATA (Berk.) Petch Peradeniya, Ceylon,  
Roy. Bot. Gard. Ann.  
5: 535. 1914.

Perfect stage of Aschersonia turbinata Berk.  
Hosts: Ceroplastes sp. Fla.  
Ceroplastes floridensis Comst. Fla.  
Coccidae C. Z., \* Costa Rica,  
Dominican Republic, P. R.  
West Indies  
Coccus mangiferae (Green)  
Lepidosaphes beckii (Newm.)

Hypocrella vilis Syd. See Noctria vilis (Syd.) Petch

HYPOCRELLA VIRIDANS (Berk. & Curt.) Petch Peradeniya,  
Ceylon, Roy. Bot.  
Gard. Ann. 7: 236-237.  
1921.

Syn.: Hypocrea viridans Berk. & Curt. Linn. Soc. Jour.  
10: 376. 1868.

Perfect stage of Aschersonia viridans (Berk. & Curt.) Pat.  
This species is collected most frequently in the imperfect stage.

ISARIA SP.

Hosts: Unidentified hosts N. C., \* Va.\*  
Carpocapsa pomonella (L.)  
Epilachna varivestis Muls. N. Mex.\*  
Grapholitha molesta (Busck) N. J., \* Ohio\*  
Heliothis armigera (Hbn.) N. Mex.\*  
Ormenis marginata Brunnich P. R.\*  
Phalaenidae Va.  
Pseudococcus boninsis (Kuw.) P. R.\*  
Saissetia oleae (Bern.) N. C., \* Va.\*  
Stilpnotia salicis (L.)  
Vespa sp.

Isaria arbuscula Hariot. See Isaria cicadae Miq.

Isaria arachnophila Ditm. See Hymenostilbe arachnophila (Ditm.) Petch

Isaria araneorum Schw. See Gibellula araneorum (Schw.) Syd.

Isaria aspergilliformis Rostrup. See Gibellula araneorum (Schw.) Syd.

ISARIA ATYPICOLA Yasuda Bot. Mag. (Tokyo) 31: 208-9.  
1917; Petch, Brit. Mycol. Soc.  
Trans. 23: 139-40. 1939.

Host: Araneida Costa Rica

Isaria barberi Giard. See Hirsutella barberi (Giard) Petch

ISARIA BRACHIATA (Batsch) Schum. Enum. Plant. Saellandiae

2: 443. 1803.

Syn.: Clavaria brachiata Batsch Elench. Fung. (Sup. 1),  
p. 233. 1786..

Hosts: Arenicta americana (Harr.)

Cicadellidae

Coleoptera

Maine

Tenn.

Tenn.

ISARIA CICADAE Miq. Sci. Phys. and Natur. Neerlande Bul.

1: 85-86. 1838.

Syn.: Isaria arbuscula Hariot Soc. Mycol. France Bul.

8: 67. 1892.

Isaria sinclairii (Berk.) Petch Brit. Mycol. Soc.

Trans. 10: 39. 1924.

Imperfect stage of Cordyceps sobolifera (Hill) Sacc.

For synonymy see Petch

Brit. Mycol. Soc.

Trans. 18: 65. 1933.

Hosts: Cicada sp.

Mexico,\* Cuba\*

ISARIA CRASSA Pers.(?) Syn. 687. 1801.

Host: Hexapoda

Isaria densa (Lk.) Fr. See Beauveria densa (Lk.) Vuill.

Isaria destructor Metsch. See Mettarrhizium anisopliae  
(Metsch.) Sor.

ISARIA DUSSII Pat. Soc. Mycol. de France Bul. 16: 187. 1900.

Host: Hexapoda

Lepidoptera

Guadeloupe

Isaria farinosa (Dicks.) Fr. See Spicaria farinosa (Fr.) Vuill.

Isaria floccosa Berk. & Br. See Hirsutella subulata Petch

ISARIA FURCATA Schw. Amer. Phil. Soc. Trans. 4 (n. ser.):

305. 1832.

Hosts: Hexapoda

Lepidoptera

Pa.

ISARIA GIGANTEA Mont. = Cordyceps gigantea (Mont.) Mass.

Ann. Bot. 9: 1-44. 1895.

"Only imperfect stage known." Massee

Host: Mygale cubana Walk.

Cuba

Isaria lecanicola Jaap. See Hirsutella lecanicola (Jaap) Petch

ISARIA NIGRIPES Schw. Amer. Phil. Soc. Trans. 4 (n. ser.):

305. 1832.

Hosts: Undetermined host

Lepidoptera

Mass.

ISARIA PATTERSONIAE Mass. Kew Bul., Misc. Inf. 1912:

358. 1912.

Hosts: Dysdercus sp.

Nezera viridula (L.)

St. Vincent

ISARIA RITCHIEI Lloyd Mycol. Writings 5: 855. 1919.

Host: Melolontha sp.

Jamaica

Isaria saussurei Cke. See Hirsutella saussurei (Cke.) Speare

Isaria sinclairii (Berk.) Petch. See Isaria cicadae Miq.

Isaria sphecophila Ditm. See Hymenostilbe sphecophila (Ditm.) Petch

Isaria sphingum Schw. See Hymenostilbe sphingum (Schw.) Petch

ISARIA TENUIPES Pk. N. Y. State Mus. Rpt. 31: 44. 1879.

Hosts: Arctiidae (dead pupae)

Hexapoda

N. Y.

ISARIA TOMICII Luggar Minn. Agr. Expt. Sta. Bul. 43: 127. 1895.

Host: Tomicus sp.

Minn.

ISARIA VEXANS Pettit See Beauveria vexans (Pettit) Petch

Knyaria coccicola (Stevenson) Cif. See Tubercularia coccicola  
Stevenson

MACROSPORIUM SP.

Hosts: Chauliognathus pennsylvanicus Deg.

Diacrisia virginica(F.)

Myzus persicae (Sulz.)

Wash.  
Colo.\*

MASSOSPORA CICADINA Pk. N. Y. State Mus. Rpt. 31: 44. 1879.

Host: Magicicada septendecim (L.)

D. C.,\* Ill.,  
Md.,\* Mich., N. J.,  
N. Mex.,\* N. Y., Ohio,  
Tex., Va.\*

METARRHIZIUM ANISOPLIAE (Metsch.) Sor. Ztschr. Kais.

Landw. f. Neurussland,

Odessa, p. 268. 1879.

Syns.: Entomophthora anisopline Metsch. Ztschr. Kais.

Landw. Gesell. f.

Neurussland, Odessa, pp.

21-50. 1879.



Syns.: Isaria destructor Metsch. Carus Zool. Anz. 3:  
44-47. 1880.  
Oospora destructor (Metsch.) Delacr. Soc. Mycol.  
de France Bul. 9: 260-264.  
1893.

Penicillium anisopliae (Metsch.) Vuill. Soc. Mycol.  
de France Bul. 20: 214-221.  
1904.

Hosts:	<u>Agriotes mancus</u> (Say)	Maine,* Nova Scotia
	<u>Anisoplia austriaca</u> Hbst.	P. R.
	<u>Aphodius</u> sp.	
	<u>Bembecia marginata</u> (Harr.)	Wash.
	Blattidae	
	<u>Bombyx mori</u> L.	N. J.
	<u>Byturus unicolor</u> Say	
	<u>Canthon</u> sp.	
	<u>Cardiophorus</u> sp.	
	<u>Chalcodermus aeneus</u> Boh.	Ga.*
	<u>Chironomus</u> sp.	Va.*
	Cicadellidae	
	Coleoptera	Canal Zone*
	<u>Cotinis nitida</u> (L.)	Ala.
	<u>Cryptocercus</u> sp.	
	<u>Cryptocercus punctulatus</u> Scudd.	Md.*
	<u>Curculio caryae</u> (Horn)	Ala.
	<u>Desmoris fulvus</u> (Lec.)	
	<u>Diabrotica longicornis</u> (Say)	Ind.
	<u>Diacrisia virginica</u> (F.)	Colo.
	<u>Diaprepes abbreviatus</u> L.	P. R.*
	Dynastinae	
	Elateridae	Oreg.
	<u>Epilachna</u> sp.	Ohio
	<u>Eleodes</u> sp.	
	<u>Forficula auricularia</u> L.	Wash.*
	Forficulidae	
	<u>Heliothis armigera</u> (Hbn.)	N. J., Va.*
	<u>Hypera nigrirostris</u> (F.)	Va.*
	<u>Hypera postica</u> (Gyll.)	
	<u>Hypera punctata</u> (F.)	Va.
	Lepidoptera	S. Dak.
	<u>Ligyris turulosus</u> Burm.	P. R.
	<u>Limonius californicus</u> (Mann.)	
	<u>Ludius cylindriciformis</u> (Hbst.)	Maine*
	<u>Metanasius hemipterus</u> (L.)	P. R.
	<u>Monocrepidius lividus</u> (Deg.)	Pa.*
	<u>Ormenis pygmaea</u> F.	P. R.
	<u>Pantonomus leucoloma</u> (Boh.)	Ala.
	<u>Phyllophaga</u> sp.	Maine, N. C., P. R.
	<u>Phyllophaga anxia</u> Lec.	Canada
	<u>Phyllophaga citri</u> Smyth	P. R.

METARRHIZIUM ANISOPLIAE (Continued)

Hosts: Phyllophaga drakii Kby.	
Phyllophaga fusca (Froel.)	Canada
Phyllophaga futilis Lec.	
Phyllophaga guianica Smyth	P. R.
Phyllophaga portoricensis Smyth	P. R.
Phyllophaga rugosa (Melsh.)	Canada
Phyllophaga vandinei Smyth	P. R.
Phytalus apicalis Blanch.	P. R.
Ponillia japonica Newm.	N. J., Pa.
Rhagoletis completa Cress.	Calif.
Samia cecropia (L.)	
Scapteriscus acletus R. & H.	Fla.
Scarabaeidae	P. R.
Strataegus sp.	P. R.
Strataegus barbigerus Chapin	P. R.
Strataegus quadrifoveatus Beauv.	P. R.
Tenebrionidae	Pa.*
Tiphia inornata Say	P. R.
Tomaspis postica (Walk.)	
Tomaspis saccharina Dist.	West Indies

METARRHIZIUM ANISOPLIAE f. MAJOR Johnston P. R. Insular  
Expt. Sta. Bul.  
10: 26. 1915.

Host: Magicicada septendecim (L.) D. C., Md., Va.\*

METARRHIZIUM BRUNNEUM Petch (?) Brit. Mycol. Soc. Trans.  
19: 189. 1935.

Host: Limonius infuscatus Mots. Oreg.\*

MICROCERA SP.

Hosts: Aonidia bullata Green	
Aonidia crenulata Green	
Aspidiotus canelliae Sign.	
Chrysomphalus dictyospermi (Morg.)	Honduras
Dialeurodes citri (Ashm.)	
Dialeurodes citrifolii (Morg.)	
Lepidosaphes beckii (Newm.)	Fla., Panama*

MICROCERA AURANTIICOLA Petch Brit. Mycol. Soc. Trans.  
7: 158-159. 1921.

Imperfect stage of Sphaerostilbe aurantiicola (Berk.  
& Br.) Petch

Hosts: Unidentified hosts	Fla., Ga.
Aspidiotus sp.	Dominican Republic
Chrysomphalus aonidum (L.)	Fla.
Lepidosaphes beckii (Newm.)	Fla.

MICROCERA COCCOPHILA Desm. Ann. Sci. Nat. (ser. 3)  
10: 539. 1848.

Imperfect stage of Sphaerostilbe flammea Tul.

Hosts: Unidentified hosts

Fla., Ga., La., Mass.,  
Pa., S. C., Tex., Cuba,  
P. R.

Aonidiella aurantii (Mask.)

Aspidiotus perniciosus Comst.

Chrysomphalus aonidum (L.)

La.\*

Chrysomphalus dictyospermi (Morg.)

La.\*

Chrysomphalus tenebricosus (Comst.)

Va.\*

Fiorinia fioriniae (Targ.)

Ischnaspis longirostris (Sign.)

Lepidosaphes beckii (Newm.)

Fla., La.\*

Lepidosaphes gloverii (Pack.)

Lepidosaphes lasianthis (Green)

Lepidosaphes pallida (Green)

Pseudaonidea duplex (Ckll.)

La.\*

Selenaspis articulatus (Morg.)

Microcera curta Sacc. See Fusarium epicoccum McAlp.

MICROCERA FUJIKUROI Miyabe & Sawada Tohoku Imp. Univ.  
Col. Agr. Jour. Sapporo  
5: 83-84. 1913.

Syn.: Pseudomicrocera hemmingsii (Koord.) Petch Brit.  
Mycol. Soc. Trans. 7:  
100-106. 1921.

Imperfect stage of Nectria diploa Berk. & Curt.

Hosts: Aonidiella aurantii (Mask.)

Aspidiotus sp. (Sec. Petch)

Chrysomphalus aonidum (L.)

Fla., P. R.

Chrysomphalus obscurus (Comst.)

Fla.

Chrysomphalus tenebricosus (Comst.)

Fla.

Coccidae

P. R.

Ischnaspis longirostris (Sign.)

P. R.\*

Lepidosaphes beckii (Newm.)

Fla., P. R.

Selenaspis articulatus (Morg.)

P. R.

Microcera parlatoria E. Trabut. See Fusarium epicoccum McAlp.

Microcera rectispora Cke. & Mass. See Tetracrium coccicolum  
Hoehn.

Microcera tonduzii Pat. See Fusarium epicoccum McAlp.

MONILIA PENICILLIOIDES Delacr. Soc. Mycol. de France,  
Bul. 13: 114. 1897.

Host: Scarabacidae



MONILIOPSIS RIGIDA Patch Brit. Mycol. Soc. Trans. 11:

258. 1926.

Host: Acarina

Fla.\*

MUCOR SP.

Hosts: Anastrepha mombinpraeoptans Sein

Fla.\*

Magicicada septendecim (L.)

Va.\*

MUCOR RACEMOSUS Fres. Beitr. Mykol., p. 12. 1850.

Hosts: Acrididae?

Anastrepha ludens (Loew)

Mexico\*

MYRIANGIUM <sup>1/</sup> ASTERINOSPORUM (Ell. & Ev.) Miller, Mycologia

32: 593. 1940.

Syn.: Cenangium asterinosporum Ell. & Ev. Torrey Bot.

Club Bul. 10: 76. 1883.

Host: Coccidae

Ala., Conn., Ga.,  
Iowa, Md., Mass., N. C.,  
N. J., \* N. Y., Pa., W. Va.,  
Canada

Myriangium curtisii Mont. & Berk. See M. duriaei

Mont. & Berk.

MYRIANGIUM DURIAEI Mont. & Berk. Journ. Bot. [London]

4: 72. 1845.

Syn.: Myriangium curtisii Mont. & Berk. Ann. Sci.

Nat. (ser. 3) 11:

245. 1849.

Hosts: Aspidiotus perniciosus Comst.

Fla.

Aulacaspis pentagona (Targ.)

Fla.

Chionaspis sp.

Va.\*

Chionaspis citri Comst.

Fla., \* Cuba, \* P. R.

Chionaspis sylvatica Sanders

Chrysomphalus obscurus Comst.

La.\*

Coccidae

Ala., \* Calif., \* Del.,  
Fla., \* Ga., Md., \* Miss., \*  
Mo., N. C., \* N. Y., \* Pa., \*  
S. C., S. Dak., Tenn., Va., \*  
W. Va., \* Cuba, Canada, Dominican  
Republic, Isle of Pines, Panama  
Fla., Barbados, Dominican  
Republic, P. R.  
P. R.

Howardia biclavis (Comst.)

Lepidosaphes beekii (Newm.)

Lepidosaphes gloverii (Pack.)

Lepidosaphes ulmi (L.)

Odonaspis pimentae Newst.

Jamaica

Parlatoria pergandii Comst.

<sup>1/</sup> The taxonomy observed in this genus is that followed by Miller in his monograph on "The genus Myriangium in North America."

MYRIANGIUM FLORIDANUM Hoehn. Akad. der Wiss. Wien, Math.-  
Nat. Kl. Sitzber. 118: 354. 1909.

Hosts: Chionaspis citri Comst.

Fla.,\* Mo.,  
Cuba\*

Coccidae

Ala., Fla., La., Miss.,  
Cuba, P. R.  
Ala., Fla.

Lepidosaphes beckii (Newm.)

MYRIANGIUM TUBERCULANS Miles Mycologia 14: 80. 1922.

Host: Coccidae

Ala., Ga., Miss.,\*  
southern U. S.

Nectria aglaeothele Berk. & Curt. See Sphaerostilbe  
flammea Tul.

Nectria coccicola Ell. & Ev. See Podonectria coccicola  
(Ell. & Ev.) Petch

NECTRIA DIPLOA Berk. & Curt. Linn. Soc. Cuba Jour. 10:  
378. 1868.

Perfect stage of Microcera fujikuroi Miyabe & Sawada

Hosts: Aonidiella aurantii (Mask.)

Chrysomphalus aonidum (L.)

Chrysomphalus obscurus (Comst.)

Chrysomphalus tenebricosus (Comst.)

Ischnaspis longirostris (Sign.)

Lepidosaphes beckii (Newm.)

Selenaspidis articulatus (Morg.)?

Tex.\*  
Fla.  
Fla.

Fla.  
Tex.\*

Nectria tuberculariae Petch. See Nectria vilis (Syd.)  
Petch

NECTRIA VILIS (Syd.) Petch Brit. Mycol. Soc. Trans. 10:  
191. 1925.

Syns.: Hypocrella vilis Syd. Ann. Mycol. 15: 215. 1917.

Nectria tuberculariae Petch Brit. Mycol. Soc.  
Trans. 7: 157. 1921.

Only imperfect stage reported in North America.

Nomuraea prasina Maublanc. See Spicaria prasina (Maublanc) Saw.

Oospora destructor (Metsch.) Delacr. See Metarrhizium anisopliae  
(Metsch.) Sor.

OPHIOCORDYCEPS ACICULARIS (Rav.) Petch Brit. Mycol. Soc. Trans.  
18: 58-61. 1933.

Syns.: Cordyceps acicularis Rav. Linn. Soc. Jour. 1: 158. 1857.

Cordyceps carolinensis Berk. & Rav. In Rav. Fungi Carol.  
exsic. No. 29. 1852.

Cordyceps ravenelii Berk. & Curt. Linn. Soc. Jour. 1:  
159. 1857.

Torrubia superficialis Pk. N. Y. State Mus. Rpt. 28:  
70. 1875.

OPHIOCORDYCEPS ACICULARIS - (Continued)

Hosts: Coleoptera

Elateridae

Phyllophaga fusca (Froel.)

Undetermined insects

S. C.

S. C., Canada\*

Pa.,\* Canada

N. C., Tenn.

OPHIOCORDYCEPS CALOCEROIDES (Berk. & Curt.) Petch Brit.

Mycol. Soc. Trans.

18: 63-64. 1933.

Syns.: Cordyceps caloceroides Berk. & Curt. Linn. Soc.

Jour. 10: 375-376. 1868.

Cordyceps wittii P. Henn. Engl. Bot. Jahrb. 23:

539. 1897.

Host: Hexapoda

Cuba

OPHIOCORDYCEPS CLAVULATA (Schw.) Petch Brit. Mycol. Soc.

Trans. 18: 53. 1933.

Syns.: Sphaeria clavulata Schw. Amer. Phil. Soc. Trans.

(n. ser.) 4: 188. 1832.

Cordyceps pistillariaeformis Berk. & Br. Ann. Nat.

Hist. (ser. 3) 13. 1861.

Cordyceps clavulata (Schw.) Ell. In Ell. & Ev. North

Amer. Pyren. 61. 1892.

Perfect stage of Hirsutella lecanicola (Jaap) Petch

Hosts: Coccidae

D. C., N. Dak.,

N. H.,\* Vt., Va.,

Canada\*

Lecanium sp.

Ind., Mich., N. Dak.,

N. J., N. Y., Wis.

D. C.

N. Y.

Lecanium corni Bouche

Lecanium fletcheri (Okl.)

Lecanium nigrofasciatum Perg.

Lecanium quercifer Fitch

Vt.,\* Canada

OPHIOCORDYCEPS HUMBERTI (Robin) Petch Brit. Mycol. Soc.

Trans. 19: 172. 1935.

Syns.: Cordyceps humberti Robin In Saussure Mon. Guepes

Soc. pp. CLXIV & 39.

1853-8.

Perfect state of Hirsutella saussurei (Oke.) Spence

Host: Vespidae

Ophiocordyceps macularis Mains. See Cordyceps macularis Mains

OPHIOCORDYCEPS PELTATA (Wakef.) Petch Brit. Mycol. Soc. Trans.

16: 74. 1931.

Syns.: Cordyceps peltata Wakef. Kew Roy. Bot. Gard Bul.

Misc. Inform. 1916: 74.

1916.

Host: Cryptorhynchus sp.



OPHIOCORDYCEPS UNILATERALIS (Tul.) Petch Brit. Mycol. Soc.

Trans. 16: 74. 1931.

Syns.: Cordyceps unilateralis (Tul.) Sacc. Syll. Fung.

2: 570. 1883.

Torrubiella unilateralis Tul. Sel. Carp. Fung.

3: 18. 1865.

Host: Formicidae

Maine, Mich., Miss.,\*  
N. C., Cuba\*

Ophionectria coccicola (Ell. & Ev.) Berl. & Vogl. See

Podonectria coccicola

(Ell. & Ev.) Petch

PENICILLIUM SP.

Hosts: Epilachna varivestis Muls.

Heliothis armigera (Hbn.)

Paradexodes epilachnae Ald.

Mass., Ohio  
Va.  
Ohio

PENICILLIUM ALBELLUM (Mass.) Petch Brit. Mycol. Soc. Trans.

16: 210. 1932.

Syn.: Cordyceps albella Maass. Ann. Bot. 9: 39. 1895.

Host: Gryllidae

Cuba

PENICILLIUM LUTEUM (series) Thom. The Penicillia, p. 479.

1930.

Host: Diatraea saccharalis (F.)

Cuba

PENICILLIUM BREVICAULE Sacc. Michelia 2: 547. 1882.

Host: Nygmia phacorrhoea (Donov.)

PENICILLIUM CYCLOPIUM Westling Arch. f. Botanik 11: 90. 1911.

Host: Byturus unicolor Say

Wash.\*

PENICILLIUM WAKSMANI Zaleski Polon. Acad. des Sci. Math. et

Nat. Bul. (ser. B) 468.

1927.

Host: Coleoptera

D. C.\*

PODONECTRIA COCCICOLA (Ell. & Ev.) Petch Brit. Mycol. Soc.

Trans. 7: 146. 1921.

Syns.: Nectria coccicola Ell. & Ev. Jour. Mycol. 2: 39.

1886.

Ophionectria coccicola (Ell. & Ev.) Berl. & Vogl.

In Sacc. Syll. Fung. Add.

218. 1886.

Scoleconectria coccicola (Ell. & Ev.) Seaver Mycologia

1: 197. 1909.

Perfect stage of Tetracrium coccicolum Hoehn.

PODONECTRIA COCCICOLA - (Continued)

Hosts: Aspidiotus perniciosus Comst.  
Chionaspis citri Comst.  
Coccidae

Fla.  
Cuba, P. R.  
Fla., \* La., \* Costa Rica, \*  
Cuba\*  
Fla., \* La., \* Miss., \*  
Cuba, Dominican Republic,  
P. R.\*  
Fla.  
Cuba  
Fla.

Lepidosaphes beckii (Newm.)

Lepidosaphes gloverii (Pack.)

Lepidosaphes sp.

Parlatoria pergandii Comst.

Pseudomicrocera henningsii (Koorders) Petch. See

Microcera fujikuroi  
Miyabe & Sawada.

RHINOTRICHUM DEPAUPERATUM Charles Mycologia 32: 540. 1940.

Host: Paratetranychus yothersi McG.

Fla.\*

RHIZOPUS NIGRICANS Ehrenb. Nova Acta Acad. Caes.

Leopaldina 10: 198. 1820.

Host: Sphingidae

Va.

SAPROLEGNIA

Species of this genus are given in lists of entomogenous fungi,  
but they are not recognized in North America as truly parasitic.

SAPROLEGNIA FERAX (Gruith) Thuret Ann. Sci. Nat. (ser. 3)

14: 230. 1850.

Syn.: Saprolegnia thureti DBy. Senckenb. Naturf. Gesell.

Abhandl. 12: 102. 1881.

Hosts: Diptera

Formicidae

Sphinx sp.

SAPROLEGNIA KAUFMANNIANA Pieters Bot. Gaz. 60: 438. 1915.

Host: Diptera

SAPROLEGNIA MONOICA Pringsh. Jahrb. f. Wiss. Bot. 1: 292. 1858.

Hosts: Diptera

Muscidae

SAPROLEGNIA MONOICA Pringsh. var. VEXANS Pieters Bot. Gaz.

60: 439. 1915.

Host: Diptera

Saprolegnia thureti DBy. See S. ferax (Gruith) Thuret.

SCLERODERRIS GIGASPORA Mass. Kew Roy. Bot. Gard. Bul.,  
Misc. Inform. 1910:  
3. 1910.

Probably Podonectria coccicola (Ell. & Ev.) Petch Brit.  
Mycol. Soc. Trans. 7:  
149. 1921.

Host: Lepidosaphes beckii (Newn.)

Barbados

Scoleconectria coccicola (Ell. & Ev.) Seaver. See Podo-  
nectria coccicola (Ell.  
& Ev.) Petch.

SCORIAS SPONGIOSA (Schw.) Fr. System. Mycol. 3: 291.  
1832.

D. C., Canada

Syn.: Botrytis spongiosa Schw. Naturf. Gesell. zu  
Leipzig 1: 127. 1822.

Associated with Prociphilus imbricator (Fitch) and  
Prociphilus tessellatus (Fitch)

# SEPTOBASIDIUM

According to Couch (see "The Genus Septobasidium"), all  
species of Septobasidium so far discovered are found on living  
plants in association with scale insects. Although a true para-  
sitization of the insects often exists, there is also an interest-  
ing symbiotic relation of the fungus and insect. The fungus is  
not only dependent on the insects for food but also as a means of  
distribution. On the other hand, the scale insects are protected  
by the fungus against unfavorable extremes of heat, dryness, or  
cold, but more especially from insect parasites. It has been shown  
(Couch) that the thinner the fungus roof over the scale the greater  
is the penetration of the ovipositor of certain wasps.

SEPTOBASIDIUM ALNI Torrend Broteria (ser. Bot.) 11: 84. 1913;  
Couch, The Genus Septobasidium,  
p. 150. 1938.

Hosts: Aspidiotus ancylus (Putn.)

S. C.

Aspidiotus diffinis Newst.

S. C.

Aspidiotus forbesi Johns.

S. C.

Aspidiotus osborni Newn. & Ckll.

S. C.

Chrysomphalus obscurus (Comst.)

S. C.

Coccidae

Ga., N. C., S. C.\*

Cryptophyllaspis liquidambaris Kot.

S. C.

SEPTOBASIDIUM ALNI var. SQUAMOSUM Couch Elisha Mitchell Sci.  
Soc. Jour. 51: 35. 1935.

Host: Cryptophyllaspis liquidambaris Kot.

S. C.

SEPTOBASIDIUM ALVEOTLATUM Couch Elisha Mitchell Sci. Soc.  
Jour. 44: 253. 1929; Couch,  
The Genus Septobasidium,  
p. 216. 1938.

Associated with Coccidae

Jamaica\*

SEPTOBASIDIUM APICULATUM Couch Elisha Mitchell Sci. Soc. Jour.  
51: 62. 1935; Couch, The  
Genus Septobasidium, p. 106.  
1938.

Ark., Fla.,  
N. C.,\* La., S. C., Va.



SEPTOBASIDIUM APICULATUM -- (Continued)

Hosts: *Aspidiotus ancyclus* (Putn.)  
*Aspidiotus diffinis* Newst.  
*Aspidiotus forbesi* Johns.  
*Aspidiotus juglans-regiae* Comst.  
*Aspidiotus osborni* Newst. & Ckll.  
*Chrysomphalus tenebricosus* (Comst.)  
*Parlatoria proteus* (Curt.)

N. C.\*

SEPTOBASIDIUM ARBOREUM (Couch) Boed. & Stein. Buitenzorg  
 Jard. Bot. Bul. (ser. 3)  
 11: 163. 1931; Couch, The  
 Genus Septobasidium, p.  
 131. 1938.

Syn.: Helicobasidium arboreum Couch Elisha Mitchell Sci.  
 Soc. Jour. 44: 257. 1929.

Associated with Coccidae

Jamaica

SEPTOBASIDIUM AREOLATUM Couch Elisha Mitchell Sci. Soc.  
 Jour. 44: 248; Couch, The  
 Genus Septobasidium, p.  
 88. 1938.

Associated with Coccidae

Jamaica

SEPTOBASIDIUM ATRATUM Pat. Soc. Mycol. de France Bul. 16:  
 181. 1900; Couch, The  
 Genus Septobasidium, p.  
 143. 1938.

Host: *Aspidiotus* sp.

Guadeloupe

SEPTOBASIDIUM ATROPUNCTUM Couch Elisha Mitchell Sci. Soc.  
 Jour. 44: 251. 1929;  
 Couch, The Genus Septo-  
basidium, p. 190. 1938.

Host: Coccidae

Jamaica

SEPTOBASIDIUM BOGORIENSE Pat. Monsunia 1: 138. 1900;  
 Couch, The Genus Septobasidium,  
 p. 213. 1938.

Host: Coccidae

Panama, St. Lucia

SEPTOBASIDIUM BURTII Lloyd Mycol. Writings 7: 1286. 1924;  
 Couch, The Genus Septo-  
basidium, p. 168. 1938.

Ala.,\* D. C.,\*  
 Fla.,\* Ga.,\* Ky.,\*  
 La.,\* Miss.,\* N. C.,\*  
 S. C., Tex.\*

(S. retiforme of American authors)

Hosts: *Aspidiotus osborni* Newm. & Ckll.  
*Chrysomphalus obscurus* (Comst.)

SEPTOBASIDIUM BURTII Lloyd var. ACERINUM Couch The  
Genus Septobasidium,  
p. 171. 1938.

Host: Coccidae?

N. C.

SEPTOBASIDIUM CANESCENS Burt. Mo. Bot. Gard. Ann. 3: 342.  
1916; Couch, The Genus  
Septobasidium, p. 107.  
1938.

Host: Mycetococcus ehrhorni (Ckll.)

Calif.

SEPTOBASIDIUM CARESTIANUM Bres. Malpighia 11: 254. 1897;  
Couch, The Genus  
Septobasidium, p.  
155. 1938.

Host: Chionaspis corni Cooley

Ontario\*

SEPTOBASIDIUM CASTANEUM Burt. Mo. Bot. Gard. Ann. 3:  
330. 1916; Couch,  
The Genus Septo-  
basidium, p. 147. 1938.

Hosts: Aspidiotus forbesi Johns.  
Aspidiotus herculeanus Ckll. & Hadden  
Coccidae

N. C.  
Fla.

Ala., Fla., Ga., La.,  
Miss., N. C.,\* S. C.\*

SEPTOBASIDIUM CIRRATUM Burt Mo. Bot. Gard. Ann. 3:  
334. 1916; Couch,  
The Genus Septo-  
basidium, p. 256.  
1938.

Host: Coccidae

Cuba

SEPTOBASIDIUM COKERI Couch Elisha Mitchell Sci. Soc.  
Jour. 51: 40. 1935;  
Couch, The Genus Septo-  
basidium, p. 138. 1938.

Hosts: Aspidiotus osborni Newm. & Ckll.  
Coccidae

Fla.  
Fla., N. C.,\* N. J.,\*  
Tenn.,\* Va.\*

SEPTOBASIDIUM CONIDIOPHORUM Couch The Genus Septobasidium,  
p. 262-3. 1938.

Hosts: Coccidae  
Lepidosaphes beckii (Newm.)

S. C.,\* Tex.,\* Cuba  
Fla.

SEPTOBASIDIUM CREMEUM Couch Elisha Mitchell Sci. Soc.  
Jour. 51: 46. 1935;  
Couch, The Genus Septo-  
basidium, p. 227. 1938.

Hosts: Aspidiotus juglans-regiae Comst.  
Coccidae  
Cryptophyllaspis liquidambaris Kot.

Fla.\*  
Fla.\*  
Fla.\*

SEPTOBASIDIUM CURTISII (Berk. & Desm.) Boed. & Stein.

Buitenzorg Jard. Bot.  
Bul. (ser. 3) 11: 181.  
1931; Couch, The Genus  
Septobasidium, p. 164.  
1938.

Syn.: Glenospora curtisii Berk. & Desmaz. Roy. Hort. Soc.  
Jour. 4: 243. 1849.

Widespread  
N. J.  
N. J.

Hosts: Aspidiotus sp.  
Chionaspis sp.  
Chionaspis gleditsiae Sanders  
Chionaspis sylvatica Sanders  
Chrysomphalus obscurus (Comst.)  
Coccidae

Ala.,\* Ark., Fla.,\*  
Ga.,\* La.,\* Md.,\* Miss.,\*  
N. C.,\* N. J.,\* S. C., Va.,\*  
Guadeloupe, Guatemala

SEPTOBASIDIUM FILIFORME Couch Elisha Mitchell Sci.

Soc. Jour. 51: 49.  
1935; Couch, The Genus  
Septobasidium, p. 205.  
1938.

Hosts: Coccidae

N. C.,\* Va.

SEPTOBASIDIUM FRAGILE Couch The Genus Septobasidium, p.  
196. 1938.

Associated with Coccidae

Jamaica

Septobasidium frustulosum (Berk. & Curt.) Pat. See S.  
rhaborbarinum (Mont.)  
Bres.

SEPTOBASIDIUM FUMIGATUM Burt. Mo. Bot. Gard. Ann. 3: 340.

1916; Couch, The Genus  
Septobasidium, p. 180.  
1938.

Hosts: Aspidiotus sp.  
Coccidae

Fla.,\* Ga., La.,  
S. C.,\* Miss.\*

Chrysomphalus tenebricosus (Comst.)

SEPTOBASIDIUM FUSCUM Couch Elisha Mitchell Sci. Soc. Jour.

51: 15. 1935; Couch, The  
Genus Septobasidium, p.  
191. 1938.

Host: Aspidiotus diffinis Newst.

La., Miss.\*



SPEOTBASIDIUM GRANDISFORUM Couch Elisha Mitchell Sci.  
Soc. Jour. 51: 72. 1935;  
Couch, The Genus Septo-  
basidium, p. 79. 1938.

Host: Chrysomphalus obscurus (Const.)

S. C.\*

SEPTOBASIDIUM GRISEUM Couch The Genus Septobasidium, p.  
98. 1938.

Host: Coccidae

Costa Rica, Cuba,  
Dominican Republic

SEPTOBASIDIUM HESLERI Couch Elisha Mitchell Sci. Soc.  
Jour. 51: 54. 1935;  
Couch, The Genus Septo-  
basidium, p. 117. 1938.

Host: Chionaspis gleditsiae Sanders

Tenn.

SEPTOBASIDIUM JAMAICAENSE Burt Mo. Bot. Gard. Ann. 3: 333.  
1916; Couch, The Genus  
Septobasidium, p. 81. 1938.

Host: Coccidae

Jamaica\*

SEPTOBASIDIUM LACUNOSUM Couch The Genus Septobasidium, p.  
291. 1938.

Host: Coccidae

Costa Rica

SEPTOBASIDIUM LANGLOISII Pat. Soc. Mycol. de France Bul. 16:  
54. 1900; Couch, The Genus  
Septobasidium, p. 98. 1938.

Hosts: Aspidiotus sp.

Fla.,\* La.,  
Miss.

Coccidae

La.,\* Miss.,\* Cuba\*

Common in Gulf Coast States

SEPTOBASIDIUM LEPIDOSAPHIS Couch Elisha Mitchell Sci.  
Soc. Jour. 51: 35.  
1935; Couch, The Genus  
Septobasidium, p. 146.  
1938.

Host: Lepidosaphes beckii (Newm.)

Fla.

SEPTOBASIDIUM LEPRIEURII (Mont.) Pat. Soc. Mycol. de France  
Bul. 16: 55. 1900; Couch,  
The Genus Septobasidium,  
p. 174. 1938.

Syn.: Corticium lepieurii Mont. Ann. Sci. Nat. (ser. 4)  
1: 140. 1854.

Hosts: Aspidiotus diffinis Newst.  
Aspidiotus herculeanus Ckll. & Hadden  
Coccidae

Fla.  
Fla., Miss., S. C.,  
Guadeloupe

- SEPTOBASIDIUM LEPROSUM Couch Elisha Mitchell Sci. Soc.  
 Jour. 51: 42. 1935;  
 Couch, The Genus Septo-  
basidium, p. 162. 1938.  
 Host: Coccidae La., N. C., S. C.,  
 Va.
- SEPTOBASIDIUM LILACINOALBUM Couch Elisha Mitchell Sci.  
 Soc. Jour. 51: 56.  
 1935; Couch, The Genus  
Septobasidium, p. 114.  
 1938.  
 Host: Chionaspis gléditsiae Sanders N. C., S. C.
- SEPTOBASIDIUM LINDERI Couch The Genus Septobasidium, p.  
 104. 1938.  
 Host: Coccidae Mass.\*
- SEPTOBASIDIUM MARIANI Bres. Ann. Mycol. 1: 24. 1903;  
 Couch, The Genus Septo-  
basidium, p. 134. 1938.  
 Host: On several species of Coccidae Ark., La.,\* N. C.,  
 N. J.,\* S. C., Tenn.
- SEPTOBASIDIUM MEXICANUM Sydow Ann. Mycol. 18: 154.  
 1920; Couch, The  
 Genus Septobasidium,  
 p. 231. 1938.  
 Host: Coccidae Mexico
- SEPTOBASIDIUM PANNOSUM (Fr.) Bres. Ann. Mycol. 14: 242.  
 1916.  
 Syn.: Corticium pannosum Fr. Nov. Symb. p. 114. 1851;  
 Couch, The Genus Septo-  
basidium, p. 235. 1938.  
 Host: Coccidae Mexico
- SEPTOBASIDIUM PATOUILLARDII Burt. Mo. Bot. Gard. Ann. 3:  
 332. 1916; Couch, The  
 Genus Septobasidium, p.  
 85. 1938.  
 Host: Chionaspis gléditsiae Sanders Fla., La., N. C.,  
 S. C.  
 Coccidae Ala.,\* La.,\* Miss.\*
- SEPTOBASIDIUM PECKII Couch Elisha Mitchell Sci. Soc.  
 Jour. 51: 75. 1935;  
 Couch, The Genus Septo-  
basidium, p. 274. 1938.  
 Host: Chionaspis sp. N. Y.

SEPTOBASIDIUM PEDICELLATUM (Berk. & Curt.) Pat. Jour. de Bot. 61: 61, 1892; Couch, The Genus Septobasidium, p. 215. 1938.

Syn.: Thelephora pedicellata Berk. & Curt. Wright's Cuban exsic. No. 798, non Schw.

Hosts: Aspidiotus sp.  
Lepidosaphes beekii (Newn.)

Cuba

SEPTOBASIDIUM PILOSUM Boed. & Stein. Arch. Theecult. 4: 48, 1930; Couch, The Genus Septobasidium, p. 261. 1938.

Hosts: Coccidae  
Leucaspis indica Marl.

Fla., La.  
Fla.

SEPTOBASIDIUM PINICOLA Snell. Mycologia 14: 55-60. 1922; Couch, The Genus Septobasidium, p. 178. 1938.

Host: Chermes sp.

Idaho, Maine,\*  
Mass.,\* N. H.,\*  
N. C.,\* N. Y.,\*  
Pa.\*

SEPTOBASIDIUM PSEUDOPEDICELLATUM Burt. Mo. Bot. Gard. Ann. 3: 327. 1916; Couch, The Genus Septobasidium, p. 132. 1938.

Host: Coccidae

Ala.,\* Fla.,\* Ga.,\*  
Ky.,\* La.,\* Mich.,\* N. C.,  
Pa., Miss.,\* R. I.,\* S. C.,  
Tenn.,\* Va.,\* W. Va.,\* Wis.,  
Mexico

SEPTOBASIDIUM PURPUREUM Couch. Elisha Mitchell Sci. Soc. Jour. 44: 255. 1929; Couch, The Genus Septobasidium, p. 80. 1938.

Host: Coccidae

Jamaica\*

SEPTOBASIDIUM RETIFORME (Berk. & Curt.) Pat. Soc. Mycol. de France Bul. 16: 55. 1900. Couch, The Genus Septobasidium, p. 90. 1938.

Syn.: Thelephora retiformis Berk. & Curt. Linn. Soc. Bot. Jour. 10: 330. 1868.

Host: Coccidae

Cuba\*

Septobasidium retiforme of American authors. See S. burtii Lloyd.



- SEPTOBASIDIUM RHABBARINUM (Mont.) Bres. Ann. Mycol.  
14: 240. 1916; Couch, The Genus Septobasidium,  
p. 122. 1938.  
Syns.: Daedalea rhabbarinum Mont. Ann. Sci. Nat. (ser.  
2) 13: 205. 1840.  
Septobasidium frustulosum (Berk. & Curt.) Pat.  
Soc. Mycol. de France  
Bul. 10: 79. 1894.  
Hosts: Aspidiotus diffinis Newst. Jamaica  
Coccidae Cuba, Grenada,  
Guadeloupe, Guatemala,  
Jamaica, Mexico, Nicaragua,  
Panama
- SEPTOBASIDIUM RUGULOSUM Couch Elisha Mitchell Sci. Soc.  
Jour. 51: 59. 1935;  
Couch, The Genus Septo-  
basidium, p. 129. 1938.  
Host: Chionaspis gleditsiae Sanders Fla., La., S. C.\*
- SEPTOBASIDIUM SABALIS Couch Elisha Mitchell Sci. Soc.  
Jour. 51: 69. 1935;  
Couch, The Genus  
Septobasidium, p. 93.  
1938.  
Host: Constockiella sabalis (Const.) La.\*
- SEPTOBASIDIUM SABAL-MINOR Couch Elisha Mitchell Sci. Soc.  
Jour. 51: 19. 1935;  
Couch, The Genus Septo-  
basidium, p. 188. 1938.  
Host: Constockiella sabalis (Const.) Fla.\*
- SEPTOBASIDIUM SCHWEINITZII Burt Mo. Bot. Gard. Ann. 3: 324.  
1916; Couch, The Genus  
Septobasidium, p. 112.  
1938.  
Host: Chionaspis gleditsiae Sanders N. C.,\* S. C.
- SEPTOBASIDIUM SEPTOBASIDIODES (P. Henn.) Lloyd Mycol.  
Writings 5: 722. 1917;  
Couch, The Genus Septo-  
basidium, p. 254. 1938.  
Syn.: Hymenochaete septobasidioides P. Henn. Hedwigia  
43: 172. 1904.  
Host: Associated with Coccidae Jamaica

SEPTOBASIDIUM SINUOSUM Couch. Elisha Mitchell Sci. Soc.

Jour. 51: 65. 1935;  
Couch. The Genus Septobasidium, p. 100. 1938.

Host: *Aspidiotus osborni* Newm. & Ckll.

Fla., La., Miss.,  
N. C., S. C.\*

SEPTOBASIDIUM SIPARIUM (Berk. & Curt.) Bres. Ann. Mycol.

18: 59. 1920; Couch,  
The Genus Septobasidium, p. 179. 1938.

Syn.: Hymenochaete siparia Berk. & Curt. Linn. Soc. Bot.  
Jour. 10: 334. 1868.

Host: Coccidae

Cuba

SEPTOBASIDIUM SPONGIUM (Berk. & Curt.) Pat. Soc. Mycol. de

France Bul. 16: 181.  
1900; Couch, The Genus  
Septobasidium, p. 187.  
1938.

Syn.: Thelephora spongia Berk. & Curt. Linn. Soc. Bot.  
Jour. 10: 330. 1868.

Hosts: *Chionaspis citri* Comst.  
Coccidae

P. R.  
Fla.,\* Cuba,\* Dominican  
Republic,\* Mexico,\* P. R.

*Lepidosaphes beckii* (Newm.)  
*Pinnaspis minor* (Mask.)

SEPTOBASIDIUM STEVENSONI Couch, The Genus Septobasidium, pp.  
186-7. 1938.

Host: Coccidae

P. R.

SEPTOBASIDIUM SUBLILACINUM (Ell. & Ev.) Burt Mo. Bot. Gard.

Ann. 3: 331. 1916; Couch,  
The Genus Septobasidium, p.  
279. 1938.

Syn.: *Thelephora sublilacina* Ell. & Ev. Iowa Univ. Lab. Nat.  
Hist. Bul. 4: 67. 1896.

Host: Associated with *Aspidiotus* sp.

Nicaragua

SEPTOBASIDIUM SYDOWII Couch Elisha Mitchell Sci. Soc. Jour.

51: 47. 1935; Couch,  
The Genus Septobasidium,  
p. 236. 1938.

Host: On Coccidae

Tex.

SEPTOBASIDIUM TAXODII Couch Elisha Mitchell Sci. Soc. Jour.

51: 48. 1935; Couch,  
The Genus Septobasidium,  
p. 193. 1938.

Host: *Aspidiotus forbesi* Johns.

La., P. R.

SEPTOBASIDIUM TENUE Couch Elisha Mitchell Sci. Soc.

Jour. 51: 58. 1935;  
Couch, The Genus  
Septobasidium, p.  
128. 1938.

Hosts: Aspidiotus sp.  
Aspidiotus juglans-regiae Comst.

S. C.\*  
Fla., Miss.

SEPTOBASIDIUM TROPICALE Burt Mo. Bot. Gard. Ann. 3:

326. 1916; Couch,  
The Genus Septobasidium,  
p. 209. 1938.

Host: On Coccidae

Mexico

SEPTOBASIDIUM VERRUCOSUM Couch The Genus Septobasidium,

p. 257-8. 1938.

Host: On Coccidae

Calif.

SEPTOBASIDIUM WESTONI Couch The genus Septobasidium, p.

120-1. 1938.

Host: Associated with Diaspis sp.

C. Z., Panama

SEPTOBASIDIUM SP., hybrid between S. castaneum and S.

patouillardii (?)  
Couch, The Genus  
Septobasidium, p.  
284-5. 1938.

Host: Associated with Coccidae

Ala.,\* La.

SIROSPHAERA CHLOROSTOMA Petch Brit. Mycol. Soc. Trans.

8: 209. 1923.

Hosts: Aegerita webberi Fawcett on Coccidae  
Aschersonia turbinata Berk. on Coccidae.

Fla.\*  
Fla.\*

SOROSPORELLA UVELLA (Krass.) Gd. Bul. Sci. de la France  
et Belg. (ser. 3) 2:

81-83. 1889.

Syn.: Tarichium uvella Krass. Soc. Nat. Nouv.-Russie  
Mem. Odessa 2: pt.  
75-112. 1886.

Sorospora agrotidis Sorok. Centbl. Bakt. u.  
Infekkr. Jahrg. 2.4:  
No. 21, 644. 1888.

Acremonium cleoni Wize. Bul. Internatl. Acad.  
Sci. Cracovie, Cl. Sci.  
Math. and Nat. No. 10.  
713-727. (1904) 1905.

Hosts: Agrotis ypsilon (Rott.)  
Cirphis unipuncta (Haw.)  
Cleonus punctiventris Germ.  
Euxoa tessellata (Harr.)

Md.\*



SOROSPORELLA UVELLA (Krass.) Gd. - (Continued)

Hosts: Feltia subgothica (Haw.)	Mass., * N. J., * Va.*
Graphiphora c-nigrum (L.)	Mass., * N. J., * Va.*
Heliothis armigera (Hbn.)	
Peridroma saucia (Hbn.)	
Phalaenidae	Eastern U. S., and Canada
Scapteriscus acleatus R. & H.	Fla.*

Sphaeria clavulata Schw. See Ophiocordyceps clavulata  
(Schw.) Petch.

SPHAEROSTILBE

Petch's study of Sphaerostilbe has shown that S. coccophila Tul., according to the specimens cited by the Tulasnes, consists of the perfect stage of one species, "S. aurantiicola (Berk. & Br.) Petch, and the imperfect stage (Microcera coccophila Desm.) of S. flammea." Petch further observes that to differentiate accurately between the two species, S. aurantiicola and S. flammea, it is necessary to have the perithecial stages, in addition to the imperfect stages, although this may not be strictly true of specimens collected in the tropics. See Petch, Brit. Mycol. Soc. Trans. 7: 109-129. 1921.

SPHAEROSTILBE AURANTIICOLA (Berk. & Br.) Petch Peradeniya, Ceylon,  
Roy. Bot. Gard. Ann. 7: 119.  
1920. See Petch, Brit. Mycol.  
Trans. 7: 158. 1921.

Syns.: Sphaerostilbe coccophila Tul. Sel. Fung. Carp. 3: 105.  
1865.

Nectria aurantiicola Berk. & Br. Linn. Soc. Jour. 14:  
117. 1873.

Perfect stage of Microcera aurantiicola Petch

Hosts: Aonidiella aurantii (Mask.)	P. R.
Aspidiotus sp.	Fla., Ga., Dominican Republic
Aspidiotus ancylus (Putn.)	Fla.
Aspidiotus diffinis Newst.	La.*
Aspidiotus forbesi Johns.	Fla.
Aspidiotus hederæ (Vall.)	Canada, P. R.
Aspidiotus lataniae Sign.	Fla., P. R.
Aspidiotus perniciosus Comst.	Fla., * Ga., * P. R.
Asterolecarium pustulans Oehl.	P. R.
Chionaspis citri Comst.	Panama*
Chionaspis pinifoliae heterophyllae Cooley	P. R.
Chrysomphalus aonidium (L.)	Fla., P. R.
Chrysomphalus dictyospermi (Morg.)	
Chrysomphalus obscurus (Comst.)	Fla., * Isle of Pines, West Indies
Chrysomphalus tenebriosus (Comst.)	
Coccidae	Costa Rica, * Dominican Republic
Coccus mangiferae (Green)	
Coccus viridis Green	Fla.

SPHAEROSTILBE AURANTIICOLA - (Continued)

- Hosts: *Comstockiella sabalis* Comst. Fla., P. R.  
*Dialeurodes citri* (Ashm.) Fla.  
*Dialeurodes citrifolii* (Morg.)  
*Diaspis* sp. La., Miss., P. R.  
*Howardia biclavis* (Comst.)  
*Ischnaspis longirostris* (Sign.)  
*Lepidosaphes* sp. Dominican Republic  
*Lepidosaphes beckii* (Newm.) Fla.,\* Ga., P. R.  
*Lepidosaphes gloveri* (Pack.) Fla.  
*Lepidosaphes ulmi* (L.) Fla.,\* Miss., Canada,\*  
P. R.  
*Parlatoria pergandii* (Comst.) Fla.\*  
*Paraltoria proteus* Curt. P. R.  
*Pinnaspis minor* (Mask.) P. R.  
*Pseudococcus citri* (Risso)  
*Pseudodiaspis yuccae* (Ckll.)  
*Saissetia oleae* (Bern.)  
*Selenaspidis articulatus* (Morg.) P. R.

Sphaerostilbe coccophila Tul. See S. auranticola (Berk. & Br.) Petch.

SPHAEROSTILBE FLAMMEA Tul. Sel. Fung. Carp. 1: 180. 1861.

Syn.: Nectria aglaothele Berk. & Curt. Grev. 4: 45. 1875.

See Petch, Brit. Mycol.

Soc. Trans. 7: 120. 1921.

Perfect stage of Microcera coccophila Desm.

- Hosts: *Chionaspis citri* Comst. Panama  
*Chrysomphalus obscurus* (Comst.) Fla.  
Coccidae Ga., La.,\* Mass.,  
N. J.,\* Pa., S. C.,  
Tex., Cuba, P. R.

SPICARIA SP.

- Hosts: *Heliothis armigera* (Hbn.) Conn.  
*Icerya purchasi* Mask. P. R.\*

SPICARIA ALEYRODIS Johnston Soc. Cubana Hist. Nat. Mem.,  
"Filipe Poey" 3: 79. 1918.

Host: *Trialeurodes variabilis* Quaint. Cuba

SPICARIA CANADENSIS Vuill. Canadian Ent. 57: 97-99. 1925.

Host: *Stilpnotia salicis* (L.) Canada, Cuba

SPICARIA FARINOSA (Fr.) Vuill. Rev. Gen. de Bot. 26: 161.  
1914.

- Syns.: Ramaria farinosa Dicks. Crypt. Brit. 2: 25. 1790.  
Isaria farinosa (Dicks.) Fr. System. Mycol. 3: 271.  
1832.

SPICARIA FARINOSA - (Continued)

Hosts: *Carpocapsa pomonella* (L.) Del., \* Wash.\*  
*Isia isabella* (A. & S.)  
 Lepidoptera  
*Lygaeonematus erichsonii* (Htg.) Canada  
*Nephelodes emmaedonia* (Cram.)  
*Phyllophaga* sp. Ill.  
*Porthetria dispar* (L.) Conn.\*  
*Pyrausta nubilalis* (Hbn.) (laboratory experiments) Mass.

SPICARIA GRACILIS Petch Brit. Mycol. Soc. Trans. 16: 241-242. 1932.

Syn.: Coremium gracilis Petch Brit. Mycol. Soc. Trans. 11: 260. 1926.

Hosts: *Bruchus pisorum* (L.) Oreg.\*

SPICARIA HELIOTHIS Charles Phytopathology 28: 897. 1938.

Host: *Heliothis armigera* (Hbn.) Ill., \* N. J., \* Ohio,\*  
 Va.\*

SPICARIA JAVANICA Bally Meded. Koffiebessenboek Fonds 6: 147. 1923.

Host: *Icerya purchasi* Mask. Fla., P. R.

SPICARIA LAXA Petch Brit. Mycol. Soc. Trans. 21: 60-61. 1937.

Host: Coleoptera Maine

SPICARIA PRASINA (Mauubl.) Sawada, Descriptive Catalogue of Formosan Fungi, p. 606. 1919.

Syn.: Nomuraea prasina Mauubl. Soc. Mycol. de France, Bul. 19: 295-296. 1903.

Host: *Anticarsia gemmatilis* (Hbn.) Fla., \* La.

SPICARIA RILEYI (Farl.) Charles Mycologia 28: 398-9. 1936.

Syn.: Botrytis rileyi Farl. U. S. Comm. Agr., Rpt. 1883, p. 121. 1884.

Hosts: *Anticarsia gemmatilis* (Hbn.) Fla., \* Ga., \* Ind.,  
*Autographa brassicae* (Riley) La., \* N. Y., \* P. R.\*  
*Cirphis unipuncta* (Haw.) D. C., La., Ohio,\*  
 Elateridae Dominican Republic  
*Heliothis armigera* (Hbn.) Fla.\*  
*Hypera punctata* (F.) Va.\*  
*Laphygma frugiperda* (A. & S.) D. C., Fla., \* La., \*  
 Ohio, P. R.  
 Phalaenidae Cuba  
*Plathypena scabra* (F.) Ind., \* N. Y.  
*Prodenia ornithogalli* Guen. Fla.\*



SPOROTRICHUM SP.

Hosts: Aphis sp.  
Aspidiotus perniciosus Comst.  
Chauliognathus pennsylvanicus Deg.  
Coccidae  
Dialeurodes citri (Ashm.)

Wash.\*  
Mexico  
Wash.\*  
P. R.\*  
Fla.\*

Sporotrichum araneorum (Cav.) Mass. See Acremonium tenuipes  
Petch.

SPOROTRICHUM COLUMNARE Petch Brit. Mycol. Soc. Trans. 19:  
186-187. 1935.

Hosts: On an undetermined fungus on cocoons of Araneida.  
Cicadellidae

P. R.  
Tenn.

Sporotrichum densum Lk. See Beauveria densa (Lk.) Vuill.

Sporotrichum entomophilum Pk. See Beauveria bassiana (Bals.)  
Vuill.

SPOROTRICHUM FLAVISSIMUM Lk. Gesell. f. Naturf. Freunde  
Sitzber. Berlin 7: 25-45.  
1916.

Host: Coleoptera

Sporotrichum larvata Pk. See Beauveria bassiana (Bals.)  
Vuill.

Sporotrichum larvicolum Pk. See Beauveria bassiana (Bals.)  
Vuill.

SPOROTRICHUM LECANII Pk. N. Y. State Mus. Rpt. 44: 25. 1890.  
Host: Lecanium sp.

SPOROTRICHUM MINIMUM Speg. Argentina Soc. Sci. Anal. 13: 24.  
1882.

Hosts: Camponotus sp.  
Hypera postica (Gyll.)  
Polia legitima (Grote)

SPOROTRICHUM PETELOTI (Vincens) Petch Brit. Mycol. Soc. Trans.  
21: 63-64. 1937.

Syn.: Beauveria peteloti Vincens Soc. Bot. de France Bul.  
(ser. 4) 62: 132-144. 1915.

Host: Cordyceps dipterigena Berk. & Br. on Diptera

N. C.

STEMPHYLIUM SP.

Host: Macrosiphum pisi (Kltb.)

STEMPHYLIUM BOTRYOSUM Wallr. Fl. Crypt. Germ. 2: 300. 1833.

Host: Coccidae

Pa.

STEREOCREA AURANTIACA Petch Brit. Mycol. Soc. Trans. 23:

135. 1939.

Perfect stage of Aschersonia aurantiaca Petch

Host: Paraleyrodes perseae (Quaint.)

Fla.\*

Sterigmatocystis nigra v. Tiegh. See Aspergillus niger v.

Tiegh.

SYNNEMATIIUM JONESII Speare Mycologia 12: 71-75. 1920.

Hosts: Unidentified host

Cicadellidae

Harpalus sp.

Hemiptera

Mezira emarginata (Say)

Mezira lobata (Say)

Philonthus sp.

D. C.

Calif.

Costa Rica

La.

La.

Maine

Tarichium uvella Krass. See Sorospora uvella (Krass.)

Gd.

TETRACRIUM COCCICOLUM Hoehn. Akad. der Wiss. Wien, Math.-

Nat. Kl. Sitzber. (abt.

1) 120: 407. 1911.

Syn.: Microcera rectispora Cke. & Mass. Grevillea 16: 4.

1888.

Imperfect stage of Podonectria coccicola (Ell. & Ev.) Petch.

Hosts: Aspidiotus perniciosus (Comst.)

Chionaspis citri (Comst.)

Coccidae

Fla.

Cuba, P. R.

Fla.,\* La.,\* Costa Rica,\*

Cuba, Dominican Republic

Fla.,\* La.,\* Miss.,\* Cuba,

Dominican Republic,\* P. R.\*

Lepidosaphes beckii (Newm.)

Lepidosaphes gloverii (Pack.)

Lepidosaphes ulmi (L.)

Parlatoria pergandii Comst.

Fla.

Miss.\*

Fla.

Thelephora spongia Berk. & Curt. See Septobasidium spongium

(Berk. & Curt.) Pat.

TORRUBIELLA LECANII Johnston Soc. Cubana Hist. Nat. Men.,

"Filipe Poey" 3: 80. 1918.

Host: Saissetia hemisphaerica (Targ.)

Cuba, P. R.

TORRUBIELLA GIBELLULAE Petch Ann. Mycol. 30: 391. 1932.

Syn.: Cordyceps arachnophila Thax. Bot. Gaz. 57: 310. 1914.

Perfect stage of Gibellula araneorum (Schw.) Syd.

Host: Araneida

Vt.,\* Va.,\* Cuba, P. R.

TORRUBIELLA PAXILLATA Petch Brit. Mycol. Soc. Trans. 21:  
49-50. 1937.

Host: Chrysopidae

N. C., Tenn.

Torrubiella superficialis Pk. See Ophiocordyceps  
acicularis (Rav.) Petch.

Torrubiella unilateralis Tul. See Ophiocordyceps unilater-  
alis (Tul.) Petch.

Trichoderma konigi Oudem. See T. viride Pers.

Trichoderma lignorum (Tode) Harz. Bul. Soc. Imper. Moscou  
44: 116-17. 1871. See  
T. viride Pers. ex Fr.

TRICHODERMA VIRIDE Pers. ex Fr. System. Mycol. 3: 215. 1829.

For discussion of this  
species complex and its  
synonymy see Disby  
Brit. Mycol. Soc. Trans.  
23: 149-168. 1939.

Hosts: Apis mellifera  
Culicidae

Md., Oreg.  
Oreg.

TUBERCULARIA COCCICOLA Stevenson P. R. Insular Expt. Sta.  
Rpt. 1916-1917: 91-92.  
1917.

Syn.: Knyaria coccicola (Stevenson) Cif. Estac. Agron.  
Moca Publ. (ser. Bot.)  
14: 178. 1929.

Imperfect stage of Nectria vilis (Syd.) Petch.

Hosts: Aspidiotus sp.  
Chionaspis citri Comst.  
Lepidosaphes beckii (Newm.)  
Pinnaspis minor (Mask.)

La.,\* P. R.\*  
P. R.  
P. R.  
P. R.

UREDINELLA COCCIDIOPHAGA Couch Mycologia 29: 665. 1937.

Hosts: Aspidiotus sp.

Fla., S. C.

VERMICULARIA CICADINA Ell. & Kellerm. Jour. Mycol. 3: 126.  
1887.

Host: Cicada sp.

Kans.

VERTICILLIUM CINNAMOMEUM Petch Brit. Mycol. Soc. Trans. 16:  
233. 1932.

Syn.: Verticillium heterocladium Fawcett non Penz.

Hosts: Aspidiotus destructor Comst.

Coccus sp.

Coccus hesperidum L.

Dialeurodes citri (Ashm.)

Dialeurodes citrifolii (Morg.)

Diaspis sp.

Lepidosaphes beckii (Newm.)

Lepidosaphes gloveri (Pack.)

Parlatoria pergandii Comst.

Cuba  
Fla.,\* Cuba,\* P. R.  
Ala., Fla., Miss.  
Fla.  
Fla.  
Fla.



VERTICILLIUM FULIGINOSUM Petch Brit. Mycol. Soc. Trans.  
19: 186. 1935.

Host: Cicadellidae

Panama

Verticillium heterocladum of Fawcett. See Verticillium  
cinnanomeum Petch.

VERTICILLIUM HETEROCLADUM Penz. Michelia 2: 462 (1882) =  
Cladobotryum heterocladum  
(Penz.) Petch. Brit. Mycol.  
Soc. Trans. 16: 232. 1932.  
According to Petch, not re-  
ported in North America.

Verticillium lecanii (Zimm.) Viegas. See Cephalosporium  
lecanii Zimm.

SELECTED REFERENCES TO THE LITERATURE ON ENTOMOGENOUS FUNGI

Billings, F. H. and Glenn, P. A.

1911. Results of the artificial use of the white fungus disease in Kansas. U. S. Dept. Agr. Bur. Ent. Bul. 107.

Burger, O. F. and Swain, A. F.

1918. Observations on a fungus enemy of the walnut aphid in southern California. Jour. Econ. Ent. 11: 278-289.

Burnside, C. E.

1930. Fungus diseases of the honeybee. U. S. Dept. Agr. Tech. Bul. 149: 1-42.

Cooke, M. C.

1892. Vegetable wasps and plant worms. London.

Couch, John N.

1938. The genus Septobasidium, pp. 1-480.

Fawcett, H. S.

1908. Fungi parasitic upon Aleyrodes citri. Fla. Univ. Spec. Studies 1: 1-41, illus. Contains an extensive bibliography.

- 
1910. An important entomogenous fungus. Mycologia 2: 164-168.

Gilbert, E. M. and Kuntz, W. A.

1926. Some diseases of Aphis spiraeicola Patch. Fla. State Plant Board Quart. Bul. 10: 1-6.

Johnston, J. R.

1915. The entomogenous fungi of Porto Rico. Porto Rico Insular Sta., Dept. Agr. and Com., Bul. 10: 1-33.

- 
1918. Algunos hongos entomogenos de Cuba. Soc. Cubana Hist. Nat. Mem. "Felipe Poey" 3, p. 79.

Kevorkian, A. F.

1937. Studies in the Entomophthoraceae. I. Observations on the genus Conidiobolus. Puerto Rico Univ. Jour. Agr. 21: 191-200.

Lefebvre, C. L.

1931. Preliminary observations on two species of Beauveria attacking the corn borer, Pyrausta nubilalis Hubner. Phytopath. 21: 1115-1128.

Lloyd, C. G.

1933. Mycological writings. 7 v. Cincinnati 1898-1925. Contain many scattered references to entomogenous fungi, particularly in the genus Cordyceps. See General Index to the Mycological

Writings of C. G. Lloyd, Lloyd Library, Cincinnati, Bul.

32 (Mycol. ser. 7). 64 pp.

Mains, E. B.

1934. The genera Cordyceps and Ophiocordyceps in Michigan. Amer. Phil. Soc. Proc. 74: 263-271.

1937. A new species of Cordyceps with notes concerning other species. Mycologia 29: 674-677.

1939. Cordyceps from the mountains of North Carolina and Tennessee. Elisha Mitchell Sci. Soc. Jour. 55: 117-129.

Masera, E.

1936. La Malattie infettive degli insetti. R. Stazione Bacologica Sperimentale di Padova. 343 pp. Bologna. (Contains a series of extensive bibliographies on all phases of entomogenous fungi.)

Massee, G.

1895. A revision of the genus Cordyceps. Ann. Bot. 9: 1-44.

Miller, J. H.

1940. The genus Myriangium in North America. Mycologia 32: 587-600.

Nolla, J. A. B.

1929. Acrostalagus aphidum and aphid control. Puerto Rico Dept. Agr. Jour. 13: 59-72.

Nowell, W.

1924. Diseases of Crop-Plants in the Lesser Antilles: 73-80.

Petch, T.

1921. Studies in entomogenous fungi. I. The Nectriae parasitic on scale insects. Brit. Mycol. Soc. Trans. 7: 89-167, illus.

1921. II. The genera Hypocrella and Aschersonia. Peradeniya, Ceylon, Roy. Bot. Gardens, Ann. 7: 167-278, illus.

1923. III. Torrubiella. Brit. Mycol. Soc. Trans. 9: 108-128, illus.

1924. IV. Some Ceylon Cordyceps. L. c. 10: 28-45, illus.



Petch, T.

1925. Studies in entomogenous fungi, (Continued) VI. Cephalosporium  
and associated fungi. L. c. 10: 152-182, illus.
- 
1925. VII. Spicaria, L. c. 10: 182-189.
- 
1926. VIII. Notes on Beauveria. L. c. 10: 244-271, illus.
- 
1926. IX. Aegeria. L. c. 11: 50-66.
- 
1926. X. Verticillium spp. L. c. 11: 251-254, illus.
- 
1926. XI. Empusa lecanii Zimm. L. c. 11: 258, illus.
- 
1927. XII. Peziotrichum lachnella; Ophionectria coccorum;  
Volutella epicoccum. L. c. 12: 44-52, illus.
- 
1927. XIII. Glenospora. L. c. 12: 105-113.
- 
1925. Entomogenous fungi: additions and corrections. L. c.  
10: 190-201.
- 
1926. II. L. c. 11: 258-266.
- 
1931. Notes on entomogenous fungi. L. c. 16: 55-75, 209-245,  
illus.
- 
1933. L. c. 18: 48-75.
- 
1935. L. c. 19: 161-194, illus.
- 
1937. L. c. 21: 34-67.
- 
1939. L. c. 23: 127-148, illus.
- 
1936. Cordyceps militaris and Isaria farinosa. L. c. 20:  
216-224.

Pettit, R. H.  
1895. Studies in artificial cultures of entomogenous fungi. Cornell Univ. Agr. Expt. Sta. Bul. 97: 339-378.

Rolfs, P. H.  
1897. A fungus disease of the San Jose scale. Fla. Agr. Expt. Sta. Bul. 41.

and Fawcett, H. S.

1913. Fungous diseases of scale insects and whitefly. Fla. Agr. Expt. Sta. Bul. 119.

Rorer, J. B.  
1913. The green Muscardine fungus and its use in cane fields. Trinidad and Tobago Bd. Agr. Circ. 8: 1-10, illus.

Seaver, F. J.  
1909. Hypocreales of North America II. Mycologia 1: 177-207.

1910. Hypocreales. North Amer. Flora 3: 1-56.

Scymour, A. B.  
1929. Host index of the fungi of North America. Fungi on insects. pp. 698-717. Cambridge, Mass.

Speare, A. T.  
1912. Fungi parasitic upon insects injurious to sugar cane. Expt. Sta. Hawaiian Sugar Planters' Assoc. (Path. & Physiol. ser.) Bul. 12: 1-62.

1920. Further studies of Sorosporella uvella, a fungus parasite of noctuid larvae. Jour. Agr. Res. 18: 399-440.

and Colley, R. H.

1912. The artificial use of the brown-tail fungus in Massachusetts. 31 pp., Boston.

Stevenson, J. A.  
1918. The green Muscardine fungus in Porto Rico. Jour. Agr. Univ. Porto Rico 2: 19-32.

Sweetman, Harvey L.  
1936. The biological control of insects. Chapter III. The use of microorganisms - Bacteria and Fungi. A good general summary of the subject. pp. 45-76. Ithaca.

Thaxter, Roland.

1888. The Entomophthorae of the United States. Boston Soc. Nat.  
Hist. Mem. 4: 133-201.

---

1914. Note on the ascospore condition of the genus Aschersonia  
Montagne Bot. Gaz. 57: 308-313.

Thom, C. and Church, M. B.

1926. The Aspergilli. Baltimore.

Watson, J. R. and Berger, E. W.

1937. Citrus insects and their control. Fla. Expt. Sta. Bul. 88.



INSECTS LISTED WITH THEIR ENTOMOGENOUS FUNGI

ACRIDIDAE

*Mucor racemosus*

ACRONICTA AMERICANA (HARR.)

*Cordyceps elongata*

*Hirsutella gigantea*

*Isaria brachiata*

ACTEBIA FENNICA (TAUSCH.)

*Empusa* sp.

*Empusa virescens*

AEOLUS DORSALIS (SAY)

*Cordyceps* sp.

AGRILUS BILINEATUS (WEB.)

*Empusa sphaerosperma*

AGRIOTES MANCUS (SAY)

*Beauveria bassiana*

*Metarrhizium anisopliae*

AGROTIS BADINODIS GROTE

*Beauveria* sp.

AGROTIS ORTHOGONIA MORR.

*Beauveria* sp.

AGROTIS SP.

*Empusa grylli*

*Entomophthora aulicae*

AGROTIS YPSILON (ROTT.)

*Fusarium* sp.

*Sorosporaella uvella*

ALEUROCANTHUS WOGLUMI ASHBY

*Aegerita webberi*

*Aschersonia aleyrodinis*

*Aschersonia cubensis*

*Aschersonia goldiana*

*Aschersonia* sp.

*Aschersonia turbinata*

ALEURODES SP.

*Aegerita webberi*

*Aschersonia* sp.

*Aschersonia aleyrodinis*

*Aschersonia columnifera*

*Aschersonia goldiana*

*Hypocrella phyllogena*

ALEURODICUS CARDINI BACK

*Aschersonia aleyrodinis*

ALEURODICUS MINIMUS QUAIN.

*Aegerita webberi*

*Aschersonia aleyrodinis*

*Aschersonia flavo-citrina*

ALEURODICUS PIMENTAE LAING

*Aschersonia aleyrodinis*

ALEUROTHRIXUS HAWARDI (QUAIN.)

*Aegerita webberi*

*Aschersonia aleyrodinis*

ALEYRODIDAE

*Aschersonia viridans*

AMPHIPYRA PYRAMIDOIDES GUEN.

*Entomophthora aulicae*

ANASTREPHA LUDENS (LOEW)

*Mucor racemosus*

ANASTREPHA MOMBINPRAEOPTANS SEIN

*Fusarium* sp.

*Mucor* sp.

ANASTREPHA SERPENTINA (WIED.)

*Aspergillus sydowi*

ANISOPLIA AUSTRIACA HBST.

*Metarrhizium anisopliae*

ANOPELES QUADRIMACULATUS SAY

*Beauveria bassiana*

ANTHONOMUS FULVIS LEC.

*Beauveria globulifera*

ANTICARSIA GEMMATILIS (HBN.)

*Fusarium* sp.

*Spicaria prasina*

*Spicaria rileyi*

AONIDIA BULLATA GREEN

*Microcera* sp.

AONIDIA CREMULATA GREEN

*Microcera* sp.

AONIDIELLA AURANTII (MASK.)

*Cladosporium* sp.

*Microcera coccophila*

*Microcera fujikuroi*

*Nectria diploa*

*Sphaerostilbe aurantiicola*

APHANUS UMBROSUS (DIST.)

*Beauveria globulifera*

APHIDIIDAE

*Cladosporium* sp.

*Empusa aphidis*

*Empusa occidentalis*

*Empusa planchoniana*

*Empusa* sp.

*Entomophthora* sp.

*Fumago vagans* (on honeydew)

APHIS FORBESI WEED

*Empusa aphidis*

APHIS GOSSYPII GLOV.

*Acrostalagus aphidum*

*Cladosporium aphidis*

*Fusarium* sp.

APHIS POMI DEG.

*Empusa aphidis*

*Empusa fresenii*

APHIS SAMBUCI L.

*Empusa aphidis*

APHIS SP.

*Acrostalagmus albus*

*Acrostalagmus aphidum*

*Cladosporium aphidis*

*Empusa aphidis*

*Empusa lageniformis*

*Empusa thalassiana*

*Sporotrichum* sp.

APHIS SPIRAECOLA PATCH

*Cladosporium aphidis*

*Empusa fresenii*

*Empusa* sp.

APHODIUS FIMETARIUS (L.)

*Beauveria bassiana*

APHODIUS SP.

*Beauveria globulifera*

*Metarrhizium anisopliae*

APHROPHORA PARALLELA (SAY)

*Entomophthora aphrophorae*

APION OCCIDENTALE FALL

*Aspergillus flavus*

APION SP.

*Cordyceps* sp.

APIS MELLIFERA L.

*Aspergillus effusus*

*Aspergillus flavus*

*Aspergillus flavus-oryzae*

*Aspergillus fumigatus*

*Aspergillus glaucus*

*Aspergillus nidulans*

*Aspergillus ochraceus*

*Aspergillus oryzae*

*Aspergillus praeiticus*

*Trichoderma viride*

ARCTIIDAE

*Empusa grylli*

*Isaria tenuipes*

ASPIDIOTUS ANCYLUS (PUTN.)

*Septobasidium alni*

*Septobasidium apiculatum*

*Sphaerostilbe aurantiicola*

ASPIDIOTUS CAMELLIAE SIGN.

*Microcera* sp.

ASPIDIOTUS DESTRUCTOR SIGN.

*Cephalosporium lecanii*

*Verticillium cinnamomeum*

ASPIDIOTUS DIFFINIS NEWST.

*Septobasidium alni*

*Septobasidium apiculatum*

*Septobasidium fuscum*

*Septobasidium lepricurii*

*Septobasidium rhabarbarinum*

*Sphaerostilbe aurantiicola*

ASPIDIOTUS FORBESI JOHNS.

*Septobasidium alni*

*Septobasidium apiculatum*

*Septobasidium castaneum*

*Septobasidium taxodii*

*Sphaerostilbe aurantiicola*

ASPIDIOTUS HEDERAE (VALL.)

*Sphaerostilbe aurantiicola*

ASPIDIOTUS HERCULEANUS CKLL. & HADDEN

*Septobasidium castaneum*

*Septobasidium lepricurii*

ASPIDIOTUS JUGLANS-REGIAE COMST.

*Septobasidium apiculatum*

*Septobasidium cremeum*

*Septobasidium tenue*

ASPIDOTUS LATANIAE SIGN.

*Sphaerostilbe aurantiicola*

ASPIDIOTUS OSBORNII NEWM. & CKLL.

*Septobasidium alni*

*Septobasidium apiculatum*

*Septobasidium burtii*

*Septobasidium cokeri*

*Septobasidium sinuosum*

ASPIDIOTUS PERNICIOSUS COMST.

*Fusarium* sp.

*Microcera coccophila*

*Myriangium duriaei*

*Podonectria coccicola*

*Sphaerostilbe aurantiicola*

*Sporotrichum* sp.

*Tetracrium coccicolum*

ASPIDIOTUS SP.

*Fusarium epicoccum*

*Microcera aurantiicola*

*Microcera fujikuroi*

*Septobasidium atratum*

*Septobasidium curtisii*

*Septobasidium fumigatum*

*Septobasidium langloisii*

*Septobasidium pedicellatum*

*Septobasidium sublilacinum*

*Septobasidium tenue*

*Sphaerostilbe aurantiicola*

*Tubercularia coccicola*

*Uredinella coccidiophaga*



## ASTEROLECANIUM BAMBUSAE BOISD.

Cladosporium sp.

## ASTEROLECANIUM PUSTULANS CKLL.

Sphaerostilbe aurantiicola

## ATTA SINGULARIS (GUER.)

Aspergillus tamaris

## AULACASFIS PENTAGONA (TARG.)

Myriangium duriae

## AUTOGRAPHA BRASSICAE (RILEY)

Beauveria densa

Beauveria globulifera

Empusa sp.

Spicaria rileyi

## AUTOMERIS SP.

Beauveria bassiana

## BEMBECIA MARGINATA (HARR.)

Metarrhizium anisopliae

## BEMISIA INCONSPICUA (QUAINT.)

Aschersonia aleyrodis

## BLATTIDAE

Cordyceps amazonica

Metarrhizium anisopliae

## BLISSUS HIRTUS. MONTD.

Beauveria globulifera

## BLISSUS LEUCOPTERUS (SAY)

Beauveria globulifera

Beauveria vexans

Cladosporium aphidis

Empusa aphidis

Empusa sp.

## BLISSUS SP.

Empusa aphidis

## BOMBYX MORI L.

Beauveria bassiana

Metarrhizium anisopliae

## BOTHRIOCERA SP.

Hirsutella saussurei

## BRACHYRHINUS SULCATUS (F.)

Fusarium sp.

## BREVICORYNE BRASSICAE (L.)

Cladosporium aphidis

Empusa aphidis

## BRUCHUS PISORUM (L.)

Beauveria bassiana

Spicaria gracilis

## BYTURUS UNICOLOR SAY

Cephalosporium sp.

Metarrhizium anisopliae

Penicillium cyclopium

## CALENDRA MAIDIS (CHITT.)

Beauveria densa

## CALLIPHORA SP.

Empusa americana

Entomophthora bullata

## CALLIPHORA VOMITORIA (L.)

Empusa americana

Empusa muscae

## CALLIPTERUS TRIFOLII MONELL

Empusa aphidis

## CAMMULA PELLUCIDA (SCUDD.)

Empusa grylli

Empusa sp.

## CAMPONOTUS ABDOMINALIS ROGER

Cordyceps sp.

## CAMPONOTUS HERCULEANUS L.

Desmidospora myrmecophila

## CAMPONOTUS HERCULEANUS PENNSYLVANICUS (DEG.)

Beauveria globulifera

## CAMPONOTUS SP.

Cordyceps lloydii

Sporotrichum minimum

## CANTHON SP.

Metarrhizium anisopliae

## CARABIDAE

Cordyceps stylophora

## CARDIOPHORUS SP.

Metarrhizium anisopliae

## CAROLINAIA CYPERI AINSLIE

Acrostalagmus aphidum

## CARPOCAPSA POMONELLA (L.)

Beauveria bassiana

Beauveria globulifera

Beauveria sp.

Fusarium sp.

Hirsutella subulata

Isaria sp.

Spicaria farinosa

## CATOCALA SP.

Entomophthora aulicae

## CERATOMEGILLA FUSCILABRIS (MULS.)

Beauveria globulifera

## CEROPLASTES FLORIDENSIS COMST.

Aschersonia turbinata

Cephalosporium lecanii

Hypocrella epiphylla

Hypocrella turbinata

## CEROPLASTES SP.

Aschersonia turbinata

Hypocrella turbinata

## CEUTHOPHILUS SP.

Empusa grylli



CHAETOCNEMA PULICARIA MELSH.

Beauveria globulifera

CHALCIDIDAE

Eurotium sp.

CHALCOPHORMUS AENEUS BOH.

Metarrhizium anisopliae

CHALEPUS DORSALUS THUNB.

Beauveria sp.

CHAULIOGNATHUS PENNSYLVANICUS DEG.

Cladosporium sp.

Empusa lampyridarum

Fusarium sp.

Macrosporium sp.

Sporotrichum sp.

CHERMES SP.

Septobasidium pinicola

CHIONASPIS CITRI COMST.

Myriangium duriaei

Myriangium floridanum

Podonectria coccicola

Septobasidium spongium

Sphaerostilbe aurantiicola

Sphaerostilbe flammea

Tetracium coccicolum

Tubercularia coccicola

CHIONASPIS CORNI COOLEY

Septobasidium caristianum

CHIONASPIS GLEDITSIAE SANDERS

Septobasidium curtisii

Septobasidium hesleri

Septobasidium lilacinoalbum

Septobasidium patouillardii

Septobasidium rugulosum

Septobasidium schweinitzii

CHIONASPIS PINIFOLIAE HETEROPHYLLAE COOLEY Beauveria bassiana

Sphaerostilbe aurantiicola

CHIONASPIS SP.

Myriangium duriaei

Septobasidium curtisii

Septobasidium peckii

CHIONASPIS SYLVATICA SANDERS

Myriangium duriaei

Septobasidium curtisii

CHIRONOMIDAE

Empusa conica

CHIRONOMUS SP.

Empusa conica

Empusa culicis

Empusa montana

Metarrhizium anisopliae

CHORIZAGROTIS AUXILIARIS (GROTE)

Empusa sp.

CHLOROPS ASSIMILIS MACQ.

Empusa muscae

CHROMAPHIS JUGLANDICOLA (KLTB.)

Entomophthora chromaphidis

CHRYSOMPHALUS AONIDUM (L.)

Microcera aurantiicola

Microcera coccophila

Microcera fujikuroi

Nectria diploa

Sphaerostilbe aurantiicola

CHRYSOMPHALUS DICTYOSPERMI (MORG.)

Microcera coccophila

Microcera sp.

Sphaerostilbe aurantiicola

CHRYSOMPHALUS OBSCURUS (COMST.)

Microcera fujikuroi

Myriangium duriaei

Nectria diploa

Septobasidium alni

Septobasidium burtii

Septobasidium curtisii

Septobasidium grandisporum

Sphaerostilbe aurantiicola

Sphaerostilbe flammea

CHRYSOMPHALUS TENEBRICOSUS (COMST.)

Microcera coccophila

Microcera fujikuroi

Nectria diploa

Septobasidium apiculatum

Septobasidium fumigatum

Sphaerostilbe aurantiicola

CHRYSOPIDAE

Torrubiella paxillata

CICADA SP.

Beauveria bassiana

Cordyceps hesleri

Cordyceps sobolifera

Isaria cicada

Vermicularia cicadina

CICADELLIDAE

Beauveria globulifera

Calonectria hirsutellae

Cladosporium aphidis

Isaria brachiata

Metarrhizium anisopliae

Sporotrichum columnare

Synnematium jonesii

Verticillium fuliginosum

CICADIDAE

Cordyceps sp.

CIRPHIS UNIPUNCTA (HAW.)

*Empusa virescens*  
*Sorosporella uvella*  
*Spicaria rileyi*

CLEONUS PUNCTIVENTRIS GERM.

*Sorosporella uvella*

COCCIDAE

*Aschersonia aleyrodis*  
*Aschersonia cubensis*  
*Aschersonia turbinata*  
*Cephalosporium* sp.  
*Hirsutella lecaniicola*  
*Hormodendron* sp.  
*Hypocrella caulium*  
*Hypocrella libera*  
*Hypocrella tamoneae*  
*Hypocrella turbinata*  
*Microcera fujikuroi*  
*Myriangium asterinosporum*  
*Myriangium duriae*  
*Myriangium floridanum*  
*Myriangium tuberculans*  
*Ophiocordyceps clavulata*  
*Podonectria coccicola*  
*Septobasidium alni*  
*Septobasidium alveolatum*  
*Septobasidium arboreum*  
*Septobasidium areolatum*  
*Septobasidium atropunctum*  
*Septobasidium bogoriense*  
*Septobasidium burtii acerinum*  
*Septobasidium castaneum*  
*Septobasidium cirratum*  
*Septobasidium cokeri*  
*Septobasidium conidiophorum*  
*Septobasidium creneum*  
*Septobasidium curtisii*  
*Septobasidium filliforme*  
*Septobasidium fragile*  
*Septobasidium funigatum*  
*Septobasidium griseum*  
*Septobasidium jamaicaense*  
*Septobasidium lacunosum*  
*Septobasidium langloisii*  
*Septobasidium leprieurii*  
*Septobasidium leprosum*  
*Septobasidium linderi*  
*Septobasidium mariani*  
*Septobasidium mexicanum*  
*Septobasidium pannosum*  
*Septobasidium patouillardii*

*Septobasidium pilosum*  
*Septobasidium pseudopedicellatum*  
*Septobasidium purpureum*  
*Septobasidium retiforme*  
*Septobasidium rhabarbarinum*  
*Septobasidium septobasidioides*  
*Septobasidium siparium*  
*Septobasidium spongium*  
*Septobasidium stevensoni*  
*Septobasidium sydowii*  
*Septobasidium tropicalo*  
*Septobasidium verrucosum*  
*Septobasidium* sp. hybrid between *S.*  
*castaneum* and *S. patouillardii*  
*Sirospheera chlorostoma*  
*Sphaerostilbe aurantiicola*  
*Sphaerostilbe flammea*  
*Sporotrichum* sp.  
*Stemphylium botryosum*  
*Tetracrium coccicolum*

COCCINELLIDAE

*Beauveria globulifera*  
*Fusarium* sp.  
*Isaria brachiata*

COCCUS ACUMINATUS (SIGN.)

*Aschersonia cubensis*  
*Hypocrella* sp.

COCCUS HESPERIDUM L.

*Aschersonia turbinata*  
*Beauveria globulifera*  
*Cephalosporium lecanii*  
*Hypocrella epiphylla*  
*Verticillium cinnamomeum*

COCCUS MANGIFERAE (GREEN)

*Cephalosporium lecanii*  
*Hypocrella epiphylla*  
*Hypocrella turbinata*  
*Sphaerostilbe aurantiicola*

COCCUS SP.

*Cephalosporium lecanii*  
*Verticillium cinnamomeum*

COCCUS VIRIDIS GREEN

*Aschersonia* sp.  
*Cephalosporium lecanii*  
*Sphaerostilbe aurantiicola*

COCHLIOMYIA-MACELLARIA (F.)

*Cordyceps dipterigena*  
*Entomophthora bullata*

COCYTIUS ANTATUS DRURY

*Cordyceps sphingum*



COLEOPTERA

Cordyceps insignis  
 Cordyceps melolonthae  
 Cordyceps palustris  
 Cordyceps pittieri  
 Cordyceps sobolifera  
 Cordyceps stylophora  
 Cordyceps submilitaris  
 Cordyceps subsessilis  
 Cordyceps superficialis  
 Cordyceps variabilis  
 Cordyceps viperina  
 Empusa apiculata major  
 Isaria brachiata  
 Metarrhizium anisopliae  
 Ophiocordyceps acicularis  
 Penicillium waksmani  
 Spicaria laxa  
 Sporotrichum flavissimum  
 COLIAS EURYTHEME BDV.  
 Fusarium sp.  
 COLIAS PHILODICE GODART  
 Empusa sphaerosperma  
 COMSTOCKIELLA SABALIS (COMST.)  
 Septobasidium sabalis  
 Septobasidium sabal-minor  
 Sphaerostilbe aurantiicola  
 CONOPIA EXITIOSA (SAY)  
 Fusarium sp.  
 CONOPIA PYRI HARR.  
 Hirsutella subulata  
 CONOTRACHELUS ERINACEUS LEC.  
 Beauveria globulifera  
 CONOTRACHELUS NEMUPHAR (HBST.)  
 Beauveria globulifera  
 CORCORIS BATATAS (F.)  
 Beauveria globulifera  
 CORYTHAICA MONACHA STAL  
 Acrostalagmus albus  
 Acrostalagmus aphidum  
 CORYTHUCHA GOSSYPII (F.)  
 Beauveria globulifera  
 COTINIS NITIDA (L.)  
 Metarrhizium anisopliae  
 CRAMBUS SP.  
 Beauveria bassiana  
 Empusa sp.  
 CRIOCERIS ASPARAGI (L.)  
 Acremoniella sp.  
 CRYMODES DEVASTATOR (BRACE)  
 Fusarium sp.

CRYPTOCERCUS PUNCTULATUS SCUDD.

Metarrhizium anisopliae

CRYPTOCERCUS SP.

Metarrhizium anisopliae

CRYPTOPHYLLASPIS LIQUIDAMBARIS KOT.

Septobasidium alni

Septobasidium alni squamosum

Septobasidium cremeum

CRYPTORHYNCHUS SP.

Ophiocordyceps peltata

CUCUJIDAE

Beauveria globulifera

CULEX SP.

Empusa culicis

CULICIDAE

Empusa culicis

Empusa sphaerosperma

Trichoderma viride

CURCULIO CARYAE (HORN)

Beauveria bassiana

Metarrhizium anisopliae

CURCULIONIDAE

Beauveria globulifera

Cordyceps curculionum

Empusa sphaerosperma

CYLAS FORMICARIUS (F.)

Beauveria globulifera

Fusarium solani

Fusarium sp.

DASYCHIRA GROENLANDICA HOMEYER

Beauveria densa

DATANA SP.

Beauveria globulifera

DELTOIDINAE

Empusa apiculata

Empusa apiculata major

DENDROCTONUS FRONTALIS ZIMM.

Cylindrocolla dendroctoni

DENDROIDES BICOLOR NEWM.

Cordyceps stylophora

DESMORIS FULVUS (LEC.)

Cordyceps sp.

Metarrhizium anisopliae

DIABROTICA LONGICORNIS (SAY)

Beauveria globulifera

Metarrhizium anisopliae

DIABROTICA SOROR LEC.

Beauveria globulifera

Empusa sp.

DIABROTICA VITTATA (F.)

Beauveria globulifera



DIACRISIA VIRGINICA (F.)

Beauveria bassiana  
Cladosporium sp.  
Empusa grylli  
Entomophthora aulicae  
Macrosporium sp.

Metarrhizium anisopliae

DIALEURODES CITRI (ASHM.)

Aegerita webberi  
Aschersonia flavo-citrina  
Aschersonia goldiana  
Aschersonia sp.  
Cladosporium sp.  
Fusarium aleyrodis  
Hypocrella disjuncta  
Hypocrella phyllogena  
Hypocrella sp.  
Microcera sp.  
Sphaerostilbe aurantiicola  
Sporotrichum sp.  
Verticillium cinnamomeum

DIALEURODES CITRIFOLII (MORG.)

Aegerita webberi  
Aschersonia aleyrodis  
Aschersonia goldiana  
Microcera sp.  
Sphaerostilbe aurantiicola  
Verticillium cinnamomeum

DIAPREPES ABBREVIATUS L.

Metarrhizium anisopliae

DIASPIS SP.

Septobasidium westoni  
Sphaerostilbe aurantiicola  
Verticillium cinnamomeum

DIASPIS ZAMIAE MORG.

Aschersonia zania  
Beauveria globulifera

DIATRAEA CRAMBIDOIDES (GROTE)

Beauveria bassiana

DIATRAEA LINEOLATA WALK.

Hirsutella barberi

DIATRAEA SACCHARALIS (F.)

Aspergillus parasiticus  
Beauveria bassiana  
Beauveria globulifera  
Cordyceps sp.  
Fusarium sp.  
Hirsutella barberi  
Hirsutella sp.  
Penicillium luteum

DIATRAEA SP.

Fusarium larvarum  
Fusarium sp.

DICRANOMYIA FUBIPENNIS O. S.

Hymenostilbe ampullifera

DIPTERA

Cordyceps dipterigena  
Cordyceps sp.

Empusa americana  
Empusa apiculata  
Empusa caroliniana  
Empusa conglomerata  
Empusa conica  
Empusa dipterigena  
Empusa echinospora  
Empusa gracilis  
Empusa grylli  
Empusa montana  
Empusa muscae  
Empusa papillata  
Empusa sepulchralis  
Empusa sp.

Empusa variabilis

Fusarium sp.

Hymenostilbe dipterigena

Saprolegnia ferax

Saprolegnia kaufmanniana

Saprolegnia monoica

Saprolegnia monoica vexans

DISONYCHA PENNSYLVANICA (ILL.)

Beauveria globulifera

DISONYCHA TRIANGULARIS (SAY)

Beauveria globulifera

DISONYCHA XANTHOMELAENA (DALM.)

Beauveria globulifera

DISSOSTEIRA CAROLINA (L.)

Empusa grylli

Empusa sphaerosperma

DORYTONUS SP.

Beauveria globulifera

DRAECULACEPHALA MOLLIPES (SAY)

Empusa grylli

DROSOPHILA MELANOGASTER MEIG.

Empusa muscae

DROSOPHILA REPLETA WOLLASTON

Empusa muscae

DROSOPHILA SP.

Beauveria globulifera

Cordyceps dipterigena

DYNASTINAE

Metarrhizium anisopliae

DYSDERCUS SP.

Isaria pattersoniae  
DYSLOBUS DECORATUS (LEC.)

Beauveria bassiana

ELATERIDAE

Cordyceps gracilis  
Cordyceps stylophora  
Cordyceps variabilis  
Metarrhizium anisopliae  
Ophiocordyceps acicularis  
Spicaria rileyi

ELEODES SP.

Metarrhizium anisopliae  
EMPOASCA FABAE (HARR.)

Beauveria globulifera

Empusa sphaerosperma

EMPOASCA PAPAYAE OMAN

Empusa apiculata major  
EMPOASCA SP.

Empusa sphaerosperma

EPICAUTA LEMNISCATA F.

Beauveria globulifera

EPILACHNA BOREALIS (F.)

Cordyceps sp.

EPILACHNA SP.

Metarrhizium anisopliae  
EPILACHNA VARIVESTIS MULS.

Beauveria globulifera

Isaria sp.

Penicillium sp.

EPITHECIA SP.

Empusa geometralis  
ERINNYIS ALOPE (DRURY)

Hymenostilbe sphingum

ERIOCOCCINAE

Hypocrella epiphylla  
ESTIGMENE ACRAEA (DRURY)

Beauveria globulifera

Empusa sp.

Empusa grylli

Entomophthora aulicae

EUCALYMNATUS TESSELLATUS (SIGN.)

Aschersonia cubensis

Aschersonia sp.

Hypocrella epiphylla

EUCHAETIAS EGLE DRURY

Entomophthora aulicae

EUCOSMA GLOMERANA (WLSM.)

Hirsutella sp.

EUTHEOLA RUGICEPS (LEC.)

Beauveria bassiana

EUMENES SP.

Cordyceps ditmari  
EUPRODES VOLUCRIS O. S.

Empusa muscae

EUPHYDRYAS PHAETON DRURY

Beauveria vexans  
EUXOA TESSELLATA (HARR.)

Sorosporella uvella  
FELTIA ANNEXA (TREIT.)

Beauveria sp.

FELTIA DUCENS WALK.

Beauveria sp.  
FELTIA GLADIARIA (MORR.)

Beauveria sp.

FELTIA SUBGOTHICA (HAW.)

Fusarium sp.

Sorosporella uvella  
FIORINIA FIORINIAE (TARG.)

Microcera coccophila  
FORFICULA AURICULARIA L.

Entomophthora forficulae

Metarrhizium anisopliae

FORFICULA SP.

Entomophthora sp.

FORFICULIDAE

Metarrhizium anisopliae

FORMICA SP.

Desmidiospora myrmecophila

FORMICIDAE

Beauveria globulifera

Beauveria vexans

Cordyceps myrmecophila

Desmidiospora myrmecophila

Hymenostilbe formicarum

Ophiocordyceps unilateralis

Saprolegnia ferax

FULGORIDAE

Hirsutella citriformis  
GALERUCHELLA XANTHOMELAEANA (SCHR.)

Beauveria globulifera

GILPINIA POLYTOMA (HTG.)

Aspergillus flavus

GRAPHIPHORA C-NIGROM (L.)

Sorosporella uvella

GRAPHOLITHA MOLESTA (BUSCK)

Isaria sp.

GRYLLOIDAE

Penicillium albellum

GRYLLOTALPA HEXADACTYLA PERTY

Cordyceps monticola

GRYLLUS SP.

Beauveria globulifera



HADENOECUS SUBTERRANEUS SCUDD.

Beauveria densa

HALICTUS ILLINOISENSIS ROBT.

Beauveria globulifera

HALICTUS SP.

Empusa sphaerosperma

HARMOLITA SP.

Aspergillus sp.

Fusarium sp.

HARMOLITA TRITICI (FITCH)

Entomophthora sp.

HARPALUS SP.

Synnematium jonesii

HELIOPHILA SP.

Beauveria sp.

Beauveria bassiana

HELIOTHIS ARMIGERA (HBN.)

Beauveria bassiana

Beauveria globulifera

Cordyceps sp.

Fusarium sp.

Isaria sp.

Metarrhizium anisopliae

Penicillium sp.

Sorospora uvella

Spicaria heliothis

Spicaria rileyi

Spicaria sp.

HELIOTHIS SP.

Fusarium merismoides

HEMARIS SP.

Beauveria globulifera

HEMiptera

Empusa apiculata

Empusa fresenii

Empusa lageniformis

Empusa occidentalis

Empusa thaxteriana

Synnematium jonesii

HEXAPODA

Cordyceps ophioglossoides

Cordyceps puiggarii

Cordyceps superficialis

Empusa fresenii

Isaria crassa

Isaria dussii

Isaria furcata

Isaria tenuipes

Ophiocordyceps caloceroides

HIPPODAMIA CONVERGENS GUER.

Beauveria globulifera

HORMAPHIS HAMAMELIDIS FITCH

Cladosporium sp.

Empusa aphidis

HOWARDIA BICLAVIS (CONST.)

Myriangium duriae

Sphaerostilbe aurantiicola

HYLASTINUS OBSCURUS (MARSHAM)

Beauveria bassiana

HYLOTOMA BERBERIDIS (SCHR.)

Entomophthora sp.

HYMENOPTERA

Beauveria densa

Empusa tenthredinis

Hirsutella citriformis

HYPERA NIGRIROSTRIS (F.)

Empusa sphaerosperma

Metarrhizium anisopliae

HYPERA POSTICA (GYLL.)

Empusa sphaerosperma

Metarrhizium anisopliae

Sporotrichum minimum

HYPERA PUNCTATA (F.)

Acremoniella verrucosa

Beauveria bassiana

Beauveria globulifera

Empusa sphaerosperma

Metarrhizium anisopliae

Spicaria rileyi

HYPHANTRIA CUNEA (DRURY)

Empusa apiculata

Empusa grylli

HYPHANTRIA SP.

Beauveria globulifera

HYPHANTRIA TEXTOR HARR.

Empusa apiculata

Empusa apiculata major

Empusa grylli

Entomophthora aulicae

HYPODERMA BOVIS (DEG.)

Fusarium sp.

HYPODERMA LINEATUM (DEVILL.)

Fusarium sp.

HYSTERONEURA SETARIAE (THOS.)

Acrostalagus aphidum

ICERYA PURCHASI MASK.

Cephalosporium lecanii

Cladosporium aphidis

Cladosporium herbarum

Cladosporium sp.

Spicaria javanica

Spicaria sp.



ICHNEUMONIDAE

Empusa sphaerosperma  
ISCHNASPIS LONGIROSTRIS (SIGN.)

Microcera coccophila  
Microcera fujikuroi  
Nectria diploa  
Sphaerostilbe aurantiicola  
ISIA ISABELLA (A. & S.)

Cordyceps militaris  
Empusa grylli  
Entomophthora aulicae  
Spicaria farinosa

KOLLA SIMILIS (WALK.)

Empusa muscae

LAMPYRIDAE

Empusa sphaerosperma  
LAPHYGMATOPHYGMA FRUGIPERDA (A. & S.)

Beauveria globulifera  
Empusa sphaerosperma  
Spicaria rileyi

LEBIA BIVITTATA F.  
Beauveria globulifera

LECANIUM CORNI BOUCHE

Hirsutella lecaniicola  
Ophiocordyceps clavulata  
LECANIUM FLETCHERI (CKLL.)

Ophiocordyceps clavulata  
LECANIUM NIGROFASCIATUM PERG.

Aschersonia sp.  
Cephalosporium lecanii  
Ophiocordyceps clavulata

LECANIUM QUERCIFEX FITCH

Ophiocordyceps clavulata

LECANIUM SP.

Aschersonia aleyrodis  
Aschersonia aristata  
Aschersonia basicystis  
Aschersonia cubensis  
Cephalosporium lecanii  
Hypocrella disjuncta  
Hypocrella epiphylla  
Ophiocordyceps clavulata  
Sporotrichum lecanii

LEPIDOPTERA

Beauveria bassiana  
Cordyceps belizensis  
Cordyceps elongata  
Cordyceps gracilis  
Cordyceps isarioides  
Cordyceps militaris  
Cordyceps paludosa

Empusa geometralis  
Empusa sphaerosperma  
Empusa virescens  
Entomophthora aulicae  
Fusarium sp.

Isaria dussii  
Isaria furcata  
Isaria nigripes  
Metarrhizium anisopliae  
Spicaria farinosa

LEPIDOSAPHES BECKII (NEWM.)

Aschersonia cubensis  
Aschersonia turbinata  
Atichia dominicana  
Fusarium aleyrodis  
Hypocrella epiphylla  
Hypocrella turinata  
Microcera sp.

Microcera aurantiicola  
Microcera coccophila  
Microcera fujikuroi  
Myriangium duriaei  
Myriangium floridanum  
Nectria diploa

Podonectria coccicola  
Scleroderma gigaspora  
Septobasidium conidiophorum  
Septobasidium lepidosaphis  
Septobasidium podicellatum  
Septobasidium spongium  
Sphaerostilbe aurantiicola  
Tetracrium coccicolum  
Tubercularia coccicola  
Verticillium cinnamomeum

LEPIDOSAPHES GLOVERII (PACK.)

Microcera coccophila  
Myriangium duriaei  
Podonectria coccicola  
Sphaerostilbe aurantiicola  
Tetracrium coccicolum  
Verticillium cinnamomeum

LEPIDOSAPHES LASIANTHIS (GREEN)

Microcera coccophila

LEPIDOSAPHES PALLIDA (GREEN)

Microcera coccophila

LEPIDOSAPHES SP.

Podonectria coccicola  
Sphaerostilbe aurantiicola

LEPIDOSAPHES ULMI (L.)

Myriangium duriaei  
Sphaerostilbe aurantiicola  
Tetracrium coccicolum

LEPTINOTARSA DECEMLINEATA (SAY)

Beauveria bassiana

Beauveria doryphorae

LEUCASPIS INDICA MARL.

Septobasidium pilosum

LIGYRUS GIBBOSUS (DEG.)

Beauveria bassiana

LIGYRUS TUMULOSUS BURM.

Metarrhizium anisopliae

LIMONIUS CALIFORNICUS (MANN.)

Metarrhizium anisopliae

LIMONIUS INFUSCATUS MOTS.

Metarrhizium brunneum

LOXOSTEGE STICTICALIS (L.)

Empusa Sphaerosperma

LUCILIA CAESAR (L.)

Empusa americana

Empusa muscae

LUDIUS CYLINDRIFORMIS (HBST.)

Metarrhizium anisopliae

LYGAEONEMATUS ERICHSONII (HTG.)

Spicaria farinosa

LYGUS COMMUNIS NOVASCOTIENSIS KNIGHT

Empusa erupta

Empusa sp.

MACRONOCTUA ONUSTA GROTE

Beauveria globulifera

MACROSIPHONIELLA SANBORNII (GILL.)

Acrostalagus aphidum

MACROSIPHUM ALLII JACKSON

Empusa aphidis

MACROSIPHUM LACTUCAE (L.)

Empusa aphidis

MACROSIPHUM PISI (KLTB.)

Empusa aphidis

Empusa thaxteriana

Stemphylium sp.

MACROSIPHUM SOLANIFOLII (ASHM.)

Empusa sphaerosperma

MAGICICADA SEPTEDECIM (L.)

Beauveria bassiana

Beauveria globulifera

Fusarium sp.

Massospora cicadina

Metarrhizium anisopliae major

Mucor sp.

MALACOSOMA AMERICANA (F.)

Aspergillus flavescens

Empusa grylli

Entomophthora aulicae

MALACOSOMA SP.

Empusa grylli

MELANOCALLIS CARYAEFOLIAE (DAVIS)

Cladosporium herbarum

MELANOPLUS BIVITTATUS (SAY)

Empusa grylli

MELANOPLUS DIFFERENTIALIS (THOS.)

Beauveria globulifera

Empusa grylli

MELANOPLUS FEMUR-RUBRUM (DEG.)

Beauveria globulifera

Empusa grylli

MELANOPLUS MEXICANUS SAUSS.

Beauveria globulifera

Empusa grylli

MELANOPLUS MEXICANUS SPRETUS (WALSH)

Beauveria globulifera

Empusa grylli

MELANOPLUS SP.

Beauveria globulifera

Empusa grylli

MELOLONTHA SP.

Isaria ritchiei

MELOLONTHA VULGARIS F.

Beauveria densa

METAMASIMUM HEMIPTERUS (L.)

Metarrhizium anisopliae

MEZIRA EMARGINATA (SAY)

Synnenetium jonesii

MEZIRA LOBATA (SAY)

Synnenetium jonesii

MICROBRACON HEBETOR (SAY)

Aspergillus parasiticus

MICROPEZIDAE

Cordyceps sp.

MICROPLECTRON FUSCIPENNIS ZETT.

Aspergillus flavus

MONOCREPIDIUS SP.

Beauveria globulifera

MONOCREPIDIUS LIVIDUS (DEG.)

Metarrhizium anisopliae

MORDELLISTENA SP.

Aspergillus flavus

MORELLIA SCAPULATA (BIGOT)

Entomophthora sp.

MURGANTIA HISTRIONICA (HAHN)

Beauveria globulifera

MUSCA DOMESTICA L.

Aspergillus sp.

Beauveria globulifera

Empusa americana

Empusa grylli

Empusa muscae

Empusa sphaerosperma

Fusarium poae



MUSCA SP.

*Empusa sphaerosperma*

MUSCIDAE

*Beauveria densa*

*Cordyceps dipterigena*

*Empusa grylli*

*Empusa sphaerosperma*

*Hymenostilbe dipterigena*

*Saprolegnia monoica*

MUSCINA STABULANS (FALL.)

*Empusa americana*

MYCETOCOCCUS EHRHORNII (CKLL.)

*Septobasidium canescens*

MYCETOPHILIDAE

*Empusa dipterigena*

*Empusa sphaerosperma*

MYOCHROUS DENTICOLLIS (SAY)

*Empusa echinospora*

MYZUS PERSICAE (SULZ.)

*Acrostalagmus aphidum*

*Cladosporium aphidis*

*Empusa aphidis*

*Empusa fresenii*

*Macrosporium sp.*

NABIS ROSEIPENNIS REUT.

*Beauveria globulifera*

NASUTITERMES SP.

*Entomophthora coronata*

NEPHELODES EMMEDONIA (GRAM.)

*Fusarium sp.*

*Spicaria farinosa*

NEUROPTERA

*Empusa rhizospora*

NEZARA VIRIDULA (L.)

*Isaria pattersoniae*

NOTOLOPHUS ANTIGUA L.

*Empusa grylli*

*Entomophthora aulicae*

NYGMIA PHAEORRHOEA (DONOV.)

*Penicillium brevicaulis*

NYSIUS ERICAE (SCHILL.)

*Beauveria bassiana*

*Beauveria globulifera*

ODONASPIS PIMENTAE NEWST.

*Myriangium duriae*

OLIBRUS SP.

*Beauveria globulifera*

ORCHESTES RUFIPES LEC.

*Cladosporium aphidis*

ORMENIS MARGINATA BRUNNICH

*Isaria sp.*

ORMENIS PYGMAEA F.

*Metarrhizium anisopliae*

OS CINELLA FRIT (L.)

*Fusarium sp.*

OSCINIS SP.

*Empusa muscae*

PACHYSPHINX MODESTA HARR.

*Entomophthora aulicae*

PAGASA FUSCA (STEIN)

*Beauveria globulifera*

PALAEOCOCCUS ROSAE (R. & H.)

*Aspergillus flavus*

PANTOMORUS LEUCOLOMA (BOH.)

*Metarrhizium anisopliae*

PARADEXODES EPILACHNAE ALD.

*Penicillium sp.*

PARALEYRODES PERSEAE (QUAINT.)

*Aschersonia aurantiaca*

*Stereocrea aurantiaca*

PARANDRA BRUNNEA (F.)

*Beauveria globulifera*

PARATETRANYCHUS YOTHERSI MCG.

*Rhinotrichum depauperatum*

PARLATORIA FERGANDII COMST.

*Myriangium duriae*

*Podonectria coccicola*

*Tetracrium coccicolum*

*Sphaerostilbe aurantiicola*

*Verticillium cinnamomeum*

PARLATORIA PROTEUS (CURT.)

*Septobasidium apiculatum*

*Sphaerostilbe aurantiicola*

PEMPHIGUS BETAE DOANE

*Empusa aphidis*

PENTATOMIDAE

*Beauveria globulifera*

PEREGRINIS MAIDIS (ASHM.)

*Empusa fresenii*

*Empusa sp.*

*Hirsutella floccosa*

PERIDROMA MARGARITOSA (HAW.)

*Entomophthora aulicae*

PERIDROMA SAUCIA (HBN.)

*Sorosporaella uvella*

PERIPHYLUS LYROPICUS (KESS.)

*Empusa fresenii*

PETROPHORA SP.

*Empusa apiculata*

*Empusa geometralis*

PHALAEINIDAE

*Beauveria globulifera*

*Isaria sp.*

*Sorosporaella uvella*

*Spicaria rileyi*



PHENACOCOCCUS SP.

*Empusa fresenii*

*Entomophthora fumosa*

PHILONTHUS SP.

*Synnematum jonesii*

PHOLUS VITIS L.

*Cordyceps sphingum*

PHORMIA REGINA (MEIG.)

*Empusa americana*

PHORODON HUMULI (SCHR.)

*Empusa aphidis*

PHRYGANEIDAE

*Empusa rhizospora*

PHYLLOPHAGA ANXIA LEC.

*Metarrhizium anisopliae*

PHYLLOPHAGA CITRI SMYTH

*Metarrhizium anisopliae*

PHYLLOPHAGA DRAKEI KBY.

*Metarrhizium anisopliae*

PHYLLOPHAGA FERVIDA (F.)

*Cordyceps militaris*

PHYLLOPHAGA FUSCA (FROEL.)

*Beauveria densa*

*Cordyceps melolonthae*

*Metarrhizium anisopliae*

*Ophiocordyceps acicularis*

PHYLLOPHAGA FUTILIS LEC.

*Metarrhizium anisopliae*

PHYLLOPHAGA GUANICANA SMYTH

*Metarrhizium anisopliae*

PHYLLOPHAGA INVERSA HORN

*Beauveria globulifera*

PHYLLOPHAGA PORTORICENSIS SMYTH

*Metarrhizium anisopliae*

PHYLLOPHAGA RUGOSA (MELSH.)

*Metarrhizium anisopliae*

PHYLLOPHAGA SP.

*Beauveria globulifera*

*Beauveria vexans*

*Cordyceps melolonthae*

*Cordyceps militaris*

*Empusa sphaerosperma*

*Metarrhizium anisopliae*

*Spicaria farinosa*

PHYLLOPHAGA VANDINEI SMYTH

*Metarrhizium anisopliae*

PHYMATIDAE

*Beauveria globulifera*

PHYTALUS APICALIS BLANCH.

*Metarrhizium anisopliae*

PIERIS BRASSICAE (L.)

*Empusa sphaerosperma*

PIERIS RAPAE (L.)

*Beauveria globulifera*

*Beauveria vexans*

*Empusa sphaerosperma*

PINNASPIS MINOR MASK.

*Septobasidium spongium*

*Sphaerostilbe aurantiicola*

*Tubercularia coccicola*

PLAGIONGNATHUS SP.

*Empusa crupta*

PLATYPENA SCABRA (F.)

*Spicaria rileyi*

PLUSIA SP.

*Beauveria globulifera*

POLIA LEGITIMA (GROTE)

*Cordyceps* sp.

*Sporotrichum minimum*

POLIA RENIGERA (STEPH.)

*Beauveria* sp.

POLISTES AMERICANA (F.)

*Cordyceps sphecocephala*

*Hirsutella saussurei*

POLISTES ANNULARIS (L.)

*Hirsutella saussurei*

POLISTES LINEATUS (F.)

*Cordyceps sphecocephala*

POLISTES SP.

*Hirsutella saussurei*

POLLENIA RUDIS (F.)

*Empusa muscae*

POLYGONIA INTERROGATIONIS (F.)

*Beauveria globulifera*

POPILLIA JAPONICA NEWM.

*Beauveria bassiana*

*Metarrhizium anisopliae*

PORTHETRIA DISPAR (L.)

*Entomophthora* sp.

*Spicaria farinosa*

PROCIPHILUS IMBRICATOR (FITCH)

*Scorias spongiosa*

PROCIPHILUS TESSELLATUS (FITCH)

*Scorias spongiosa*

PRODENIA ORNITHOGALLI GUEN.

*Beauveria* sp.

*Spicaria rileyi*

PRODENIA PRAEFICA GROTE

*Fusarium* sp.

PRODENIA SP.

*Aspergillus niger* v.

*Empusa* sp.

PROTOPARCE SEXTA (JOHAN.)

*Beauveria globulifera*

*Empusa grylli*

*Entomophthora aulicae*

PROTOPARCE SP.

Beauveria globulifera

PROTOPULVINARIA PYRIFORMIS (CKLL.)

Cephalosporium lecanii

Hypocrella epiphylla

PSEUDAONIDIA DUPLEX (CKLL.)

Cephalosporium lecanii

Cladosporium sp.

Microcera coccophila

PSEUDOCOCCUS BONINSIS (KUW.)

Aspergillus flavus

Aspergillus parasiticus

Isaria sp.

PSEUDOCOCCUS CITRI (RISSO)

Empusa fresenii

Empusa lecanii

Entomophthora fumosa

Sphaerostilbe aurantiicola

PSEUDOCOCCUS NIPAE (MASK.)

Cephalosporium lecanii

Empusa fresenii

PSEUDOCOCCUS SP.

Aspergillus flavus

Aspergillus parasiticus

Aspergillus sp.

Entomophthora sp.

PSEUDODIASPIS YUCCAE (CKLL.)

Sphaerostilbe aurantiicola

PSOCUS SP.

Entomophthora chromaphidis

PSYLLA MALI (SCHMIDB.)

Empusa sphaerosperma

PTILODACTYLA SERRICOLLIS (SAY)

Empusa apiculata major

PTYCHODES TRILINEATA (L.)

Empusa sphaerosperma

PYRAUSTA NUBILALIS (HBN.)

Acrostalagmus albus

Aspergillus parasiticus

Beauveria bassiana

Beauveria globulifera

Hirsutella sp.

Spicaria farinosa

RHAGOLETIS COMPLETA CRESS.

Empusa grylli

Metarrhizium anisopliae

RHOPALOSIPHUM PRUNIFOLIAE (FITCH)

Empusa sp.

RHOPALOSIPHUM PSEUDOBRASSICAE (DAVIS)

Acrostalagmus aphidum

Empusa aphidis

Empusa sp.

RHOPALOSIPHUM RUFOMACULATUM (WILSON)

Acrostalagmus aphidum

RHOPOBOTA NAEVANA (HBN.)

Empusa sphaerosperma

RODOLIA CARDINALIS (MULS.)

Beauveria globulifera

SAISSETIA HEMISPHERICA (TARG.)

Aschersonia cubensis

Cephalosporium lecanii

Hypocrella epiphylla

Torrubiella lecanii

SAISSETIA NIGRA (NIETN.)

Cephalosporium lecanii

SAISSETIA OLEAE (BERN.)

Cephalosporium lecanii

Isaria sp.

Sphaerostilbe aurantiicola

SAMIA CECROPIA (L.)

Beauveria globulifera

Metarrhizium anisopliae

SAPROMYZA LONGIPENNIS (F.)

Empusa echinospora

SCAPTERISCUS ACLETUS R. & H.

Cordyceps sp.

Metarrhizium anisopliae

Sorossporella uvella

SCARABAEIDAE

Cordyceps macularis

Cordyceps michiganensis

Cordyceps sobolifera

Metarrhizium anisopliae

Monilia penicillioides

SCATOPIAGA SP.

Empusa sp.

SCHISTOCERCA AMERICANA (DRURY)

Beauveria globulifera

SCHISTOCERCA PARANENSIS BURM.

Botrytis sp.

SCHIZURA CONCINNA (A. & S.)

Beauveria vexans

SCIARA SP.

Empusa sciarae

SCOLYTUS MULTISTRIATUS (MARSHAM)

Beauveria bassiana

SELENASPIDUS ARTICULATUS (MORG.)

Hornodendron sp.

Microcera coccophila

Microcera fujikuroi

Nectria diploa

Sphaerostilbe aurantiicola

SELENOTHERIPS RUBROCINCTUS (GIARD)

Beauveria globulifera



SIMULIUM VENUSTUM SAY

Empusa culicis

SIPHA FLAVA (FORBES).

Acrostalagmus albus

Acrostalagmus aphidum

Cladosporium sp.

SITONA HISPIDULA (F.)

Beauveria bassiana

Beauveria globulifera

SOLUBEA PUGNAX (F.)

Beauveria globulifera

SPIENOPHORUS SP.

Cordyceps sp.

SPHINGIDAE

Beauveria globulifera

Hymenostilbe sphingum

Rhizopus nigricans

SPHINX SP.

Cordyceps sphingum

Hymenostilbe sphingum

Saprolegnia ferax

STAPHYLINIDAE

Beauveria bassiana

Beauveria globulifera

STERNECHUS PALUDATUS CASEY

Fusarium sp.

STILPNOTIA SALICIS (L.)

Beauveria globulifera

Isaria sp.

Spicaria canadensis

STRATAEGUS BARBIGERUS CHAPIN

Metarrhizium anisopliae

STRATAEGUS QUADRIFOVEATUS BEAUV.

Metarrhizium anisopliae

STRATAEGUS SP.

Metarrhizium anisopliae

SYRPHIDAE (Syrphus sp.)

Empusa muscae

TACHINA SP.

Empusa muscae

TACHYTES ARGENTIPES SMITH

Cordyceps sphecocephala

TENEBRIONIDAE

Metarrhizium anisopliae

TENTHREDINIDAE

Beauveria globulifera

Empusa tenthredinis

TETRANYCHUS TELARIUS (L.)

Aspergillus depauperatus

THERA SP.

Empusa geometralis

THRIPIDAE

Beauveria globulifera

THRIPS TABACI LIND.

Empusa sphaerosperma

THYANTA CUSTATOR (F.)

Beauveria globulifera

THYRIDOPTERYX EPIHEMERAEFORMIS (HAW.)

Beauveria vexans

TIBICEN VITRIPENNIS (SAY)

Cordyceps sp.

TIPHIA INORNATA SAY

Metarrhizium anisopliae

TIPULA INFUSCATA LOEW

Beauveria densa

TIPULA FLAVICANS F.

Empusa grylli

TIPULA SP.

Empusa caroliniana

Empusa conglomerata

Empusa dipterigena

TIPULIDAE

Beauveria densa

Empusa conglomerata

Empusa sepulchralis

Empusa variabilis

TOMASPIS POSTICA (WALK.)

Metarrhizium anisopliae

TOMASPIS SACCHARINA DIST.

Empusa sp.

Metarrhizium anisopliae

TOMICUS SP.

Isaria tomicii

TORTRIX SP.

Empusa apiculata

TOUMBEYELLA LIRIODENDRI (GMEL.)

Aschersonia cubensis

Eypocrella epiphylla

TOXOPTERA AURANTIAE (FONSC.)

Acrostalagmus aphidum

TRIALEURODES ABUTILONEA (HALD.)

Aschersonia aleyrodis

TRIALEURODES FLORIDENSIS (QUAINT.)

Aschersonia aleyrodis

TRIALEURODES VARIABILIS QUAIN.

Spicaria aleyrodis

TRICHOPTERIS TEXANA LEC.

Beauveria globulifera

TRIMEROPTERIS MARITIMA (HARR.)

Empusa grylli

TROPAEA LUNA (L.)

Hirsutella sp.



TYPHLOCYBA POMARIA MCATEE

Empusa sphaerosperma

TYPHLOCYBA SP.

Empusa apiculata

VESPA SP.

Beauveria globulifera

Cordyceps smithii

Cordyceps sphecocephala

Isaria sp.

VESPIDAE

Hirsutella saussurei

Hirsutella sp.

Hymenostilbe sphecocephala

Ophiocordyceps humberti

VESPULA VULGARIS L.

Cordyceps ditmari

VINSONIA STELLIFERA WESTW.

Aschersonia turbinata

ZONOSEMATA ELECTA (SAY)

Fusarium sp.

- - - - -

ACARINA (SPIDERS)

Acremonium tenuipes

Beauveria densa

Cephalosporium sp.

Cordyceps dipterigena (on Mydaea sp.)

Cordyceps thaxteri

Gibellula araneorum (on Attidae)

Hymenostilbe arachinophila

Isaria atypicola

Isaria gigantea (on Mygale cubana Walk.)

Moniliopsis rigida

Sporotrichum columnare

Torrubiella gibellulac

- - - - -

FONTARIA CORRUGATA (WOOD) (A MILLIPED)

Entomophthora sp.

- - - - -

POLYDESMUS SP. (A MYRIAPOD)

Beauveria globulifera



*[Faint, illegible text from the reverse side of the page, appearing as bleed-through.]*